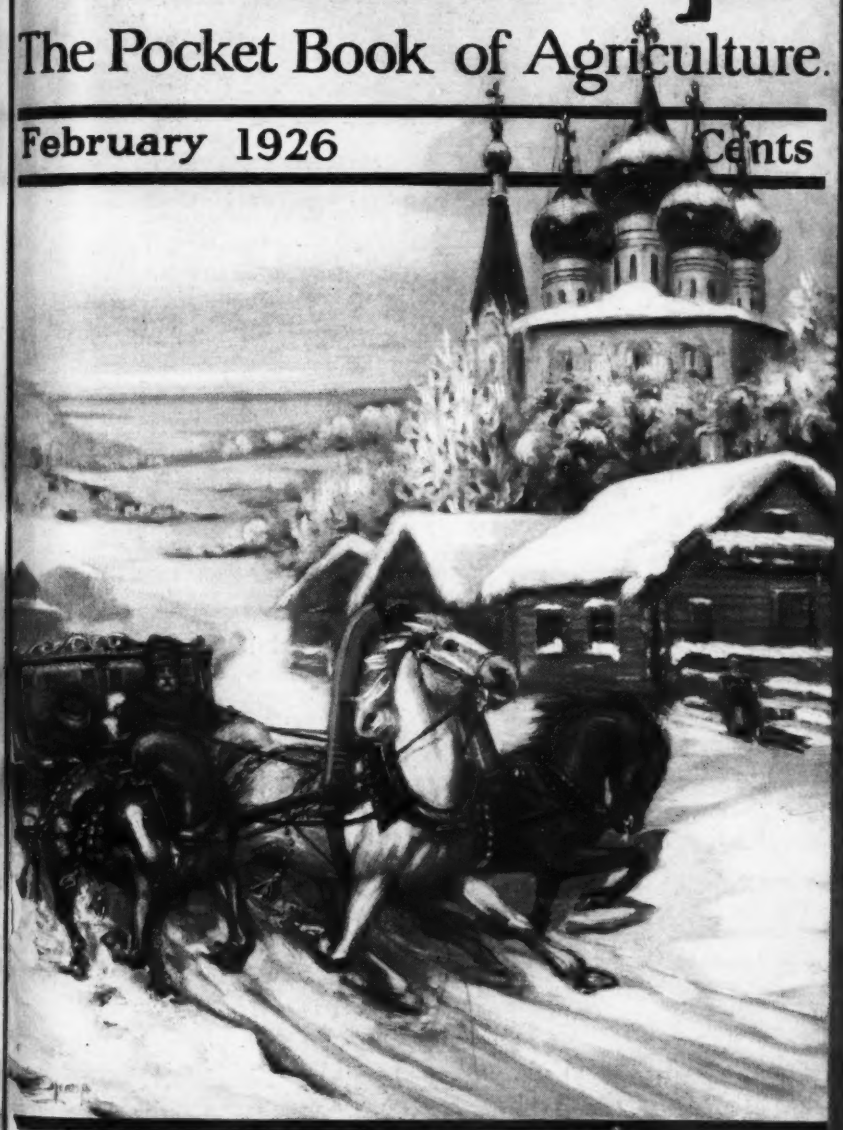
Better Crops

The Pocket Book of Agriculture.

February 1926 Cents



nis time: Thoroughness—Lambing Time—Why Farm Electrifi-
ation Drags—Reclaiming the East—Beautifying the Farm Home

"Squanto"

"Squanto" was our first extension worker. To know him, we must turn back the pages of history to Pilgrim days.

The Pilgrims were not trained in the methods of agriculture. Few, if any, had any practical experience in farming. They learned some of their first lessons from "Squanto"—a friendly Indian.

He showed them how, by placing two dead fish in each corn hill, the plants thrived and produced large crops. Later on when the fish failed to keep up the good growth of stalks and ears, they discovered how the ashes of burned brush, combined with the dead fish, again produced abundant corn. Modern science shows that that was because the ashes contained potash, which made a more balanced plant food.

From that crude primitive beginning, our scientific farm practices, fertilization and rotation have developed. We now speak of dead fish and wood ashes in terms of nitrogen, phosphoric acid, and potash. The methods have changed, but the principles are the same.

During the past eight years the American farmer consumed an average greater than 6 million tons of high analysis fertilizer per year. The estimated consumption for 1925 totals more than 7,500,000 tons.

And, just as "Squanto" advised the Pilgrim, agricultural extension workers are advising the modern farmer to use the best balanced fertilizer for his various crops.

Potash Importing Corporation
of America

10 Bridge Street, New York City

Better Crops

The Pocket Book of Agriculture

The Whole Truth—Not Selected Truth

VOLUME V NUMBER SIX

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The Editors Talk

AGRICULTURAL SERVICE

We are all impressed with the fact that this is an age of service—with the idea that service must be rendered, as well as goods sold. Organizations now exist, costing several millions annually, solely to determine and render the most efficient service—much of it free or at a nominal charge.

Do we get our money's worth?

Probably for no other class of men are there so many service organizations maintained as for the farmer. By lectures, mail, personal visits, and through the air, literally thousands of people daily are telling the farmer what to do and how to do it.

For the farmer, some 6,000 scientific agricultural "projects" are conducted, supervised by thousands of trained workers. The results of this research are taken to the farmers by another group of more than 4,000 official advisors.

Commercial organizations of all descriptions—financial, chemical, railroads, department stores, machinery, and many others are fast organizing agricultural departments to add to the free service given to the farmer.

What is the meaning of this growing volume of service? Is there too much? Is it effective?

Service is not a vague and passing idea. It is a permanent growth. In its best sense service means the development of a growing sense of our responsibility to others—a clearer conception of our obligation to those with whom we deal and a desire to express this obligation in practical terms. As a shrewd Scot, viewing his stubborn and rock-ribbed acres, once said, "We can only confer a permanent benefit on ourselves by first conferring a benefit on others."

This idea we are incorporating into our social and business motives. For the sake of brevity, it is summed up in the one comprehensive word, "Service." Though no doubt it is used many times as a convenient catch word for lesser things, underneath is a basis of true idealism. In governmental departments and in business from top to bottom, the idea is growing.

The great danger is that in the fast growing of a service of all kinds maintained for the farmer, shallowness and confusion

will result. The word may thus come to represent something that is confusing and unreliable.

On matters of everyday ocurrence in the handling of soils, fertilizers, crop production, and the management of stock, the farmer is advised in many cases, no doubt, to do a dozen different things and adopt a dozen different methods, all by experts connected with various "service" organizations.

The needs of true agricultural service are many, but there are three of especial importance: first, thoroughness—service on the basis of ascertained and carefully studied facts; second—in some way the incorporation of clear, far-sighted vision that can estimate the value of permanent betterment; and third—straight dealing and thinking, the elimination of "devious" ways, one of the hardest factors that efficient service has to overcome.

On the basis of these essentials, men can express in practical terms their obligation to their fellows, to the people with whom they deal, and add to the profits, not only of themselves but of others, for the benefit of all men.

Such is true service.

1926 TOBACCO OUTLOOK For the past ten years there has been a vast expansion of the tobacco industry. Writers have warned farmers of the possibility of over-production. Experimental Stations in the tobacco producing regions have rendered invaluable assistance in the matter of selection of high yielding varieties, information on cultural and production methods, timely advice on insect and disease control and prevention, methods of curing, and assistance in the important problems of fertilizing, grading and marketing.

In spite of the efforts of the above agencies to protect the farmers' interest, much tobacco has reached the markets which, because of poor quality or undesirable type, could not be sold with profit to the farmer. Tobacco has been grown in numerous instances under soil and climatic conditions not at all favorable to the crop. Certain areas have developed so rapidly that there has been an over-production. In almost all the important tobacco districts, because of eagerness to profit on the high market following the war, the factor of quality has been neglected. In all of the producing area there are farmers who have by use of fertilizers unsuited to the crop, materially lowered the average price of tobacco by flooding the market with tobacco for which there was little demand.

Reports from the Bright Flue-Cured tobacco district of North Carolina and Virginia, point to at least as large an average in 1926 as in 1925. The price for 1925 crop was satisfactory in most cases in this district. Farmers in this region appear to be following more closely than ever recommendations of their agricultural experts and it is believed a healthy condition prevails as regards probable acreage and attention to certain details affecting production of quality leaf.

In South Carolina and Georgia, especially in the Flue-Cured district, prices during 1925 have not been satisfactory. Experts at the experiment stations say the acreage will probably not be increased and that farmers are being urged to give more attention to grading, selection and proper use of fertilizers in an effort to compete with farmers farther north.

The situation is vastly different in the northern cigar leaf and binder districts of Wisconsin, Ohio, Pennsylvania, New York, Massachusetts and Connecticut. Here it appears there is an overproduction and a great depression of the market. On this market there appears to be a surplus of about two years market demand. Farmers in certain districts have decided to grow some other cash crop and all along the line there are indications that the acreage will be cut.

In the Export district of Maryland there is little cause for alarm. Prices have been fair to good and while the market was slow to move the crop, press reports indicate there will be no surplus. The big problems in this district appears to be that of convincing the farmer of the importance of proper grading and packing. This aspect of the situation is being carefully and efficiently handled by the Maryland Tobacco Growers Association in cooperation with experts of the State Experiment Station and Federal Department of Agriculture.

In the Burley tobacco district of Tennessee and Kentucky and the Dark tobacco district of Virginia, conditions are fairly satisfactory. Prices for good quality tobacco generally have been good. Too much poor quality tobacco, however, has found its way to the market and the price level to some extent has been affected. Looking at the whole field—from the viewpoint of an economist—it is impossible to paint a rosy picture of the tobacco situation for 1925 or to hold out much encouragement for better prices for the 1926 crop.

Careful study should be made of the several markets as to surplus and demand and the 1926 acreage figured accordingly. It is obvious that there has been a large over-production with discouraging results in certain districts.

Common-sense interpretation of the situation as it appears now would seem to justify a consideration of reducing the acreage in almost all tobacco districts and more careful attention to the all-important factor of tobacco fertilization. Quality as well as yield are largely determined by the fertilizers used.

Probably the best slogan for the tobacco growers of the United States this year should be: "A smaller acreage, better high yielding varieties, more attention to cultural and curing methods, and more and better tobacco fertilizer."

CALIFORNIA East is East and West is West—but the Pacific Coast is the land of sunshine.

One of our editors has returned recently from a visit and is enthusiastic about all he saw. He believes that the Coast is making rapid strides, especially in matters of more efficient crop production.

Among other developments, a Soil Improvement Committee has been organized by the Fertilizer Manufacturers of California.

The Committee is enthusiastic. The fertilizer companies are supporting them—moved by the real cooperative spirit, not only among themselves in the best interests of the industry and the farmer, but by cooperating with the Experiment Station workers as well.

We offer all these gentlemen our sincerest congratulations on the inception of this movement, and wish it all the success it deserves. Everyone is fortunate in having available at the Riverside Horticultural Experiment Station 70 miles from Los Angeles, 50 acres of citrus fruits planted seven years ago—now ready for experimental work with fertilizers.

The Experiment Station officials have offered to cooperate with the Committee in planning new work. This experimental work will mean a great deal to the citrus industry of the future. Cooperation is a frail plant, it needs constant cultivation, but we feel that it will thrive well in this instance.

Another thing—as G. P. Gray, State Chemist, points out the California consumer of fertilizer is to be complimented on the use of high analysis fertilizers. The average analysis for all classes of mixed goods shows 17 units of plant food. It is also encouraging to note that since 1923 the State of California now requires a segregation of the fertilizer tonnage sold. Data of this kind, some details regarding the fertilizer used in a state is valuable and needed in other fertilizer-using states.

A profitable pair

Better Crops

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VOL. V NEW YORK, FEBRUARY, 1926 No. 6

A little essay on—

Thoroughness

By Jeff McDermid

MY friend Eddie Bok, who used to edit The Homely Ladies Choinal, with a corn cob pipe and a wrinkled brow, announces that the trouble with Americans is that they are not thorough.

Bok, in the land of dikes and tulips, was early trained in the homely Dutch way—taught that "whatever was worth doing at all was worth doing well," to use the apt expression of Lord Chesterfield who, by the way, was not a Dutchman.

And so, in a Collier's editorial, he jumps down the throat of Young America and seeks by precept, example and exhortation, to educate it to thoroughness.

Bok says, "As a Dutch boy one of the cardinal truths taught me was that whatever was worth doing was worth doing well: that next to honesty came thoroughness as a factor in success." Bok says that "if a boy in America abbreviated the word 'Company' to 'Co.' he received a hundred per cent mark." And he continues his tirade by warning, "There is no use of preaching this doctrine of thoroughness if the son sees abbrevia-

tions rampant on his father's business letterheads and practiced by him in his letters. We must practice ourselves what we preach to our children."

This matter of abbreviation is merely a small hole indicative of a great cavity in American mentality. "It is," he says, "like a snowflake which we fleck from our coats, but which multiplied can render helpless the most powerful engine conceived by the mind of man." We must never save time by abbreviating anything, because if we do it is only a step from that to greater crimes.

The editorial is startling. We thrill to it with our mental hair on end.

And then Monsieur Bokerino, in a naive way, signs his preachment "Edward W. Bok"—abbreviates the bull's-eye of his own baptismal handle—and leaves us in doubt as to whether he was spoofing us or not! We pause, ponder and philosophize; in doubt as to what the abbreviation "W." stands for. Inevitably we come to the conclusion that the "W." must be the symbol for "Waggish."

But to make even more effective the attempt at educating Americans in the efficient art of thoroughness, the lean, intelligent face of the whilom editor peers forth from among the eight-point lines of his screed, with a look that says, "I've *said* ye were not thorough! Ye abbreviate maliciously. I put forth my jaw at ye! When will ye learn?"

And under the audacious portrait appear these cryptic hieroglyphics, "© U. & U."

Now, for the benefit of the initiated, let it be at once known and understood that these four quaint characters are simply beautiful, poetic studies in Americana—succinct examples of that lack of thoroughness that is rapidly sending us to the "demnition bow-wows." Sherlock Holmes would, with the assistance of the alert Watson, quickly deduce that these hieroglyphics are not, as originally supposed, "dancing men," but are the childish, American manner of saying, "Copyright, Underwood and Underwood"!

"A splendid example, Watson, of that unfortunate, un-Dutch failing of these stupid Americans through which they reduce thirty letters to four! Most astounding, my dear Watson, most astounding!"

Bok is respectfully referred, by permission, to John VIII, 7.

* * *

THOROUGHNESS, like Einstein's theory, is a matter of relativity.

And thoroughness is not, I believe, the racial or national characteristics of any one people. "You cannot condemn a race," nor can you attribute to one race alone a quality which all have in common.

The Dutch are thorough, as Bok says. But so, in a different manner are the English, Germans, French, Czecho-Slovaks and Russians. Yes, and the Americans, in spite of Edward W.'s hasty and ill-conceived declamation.

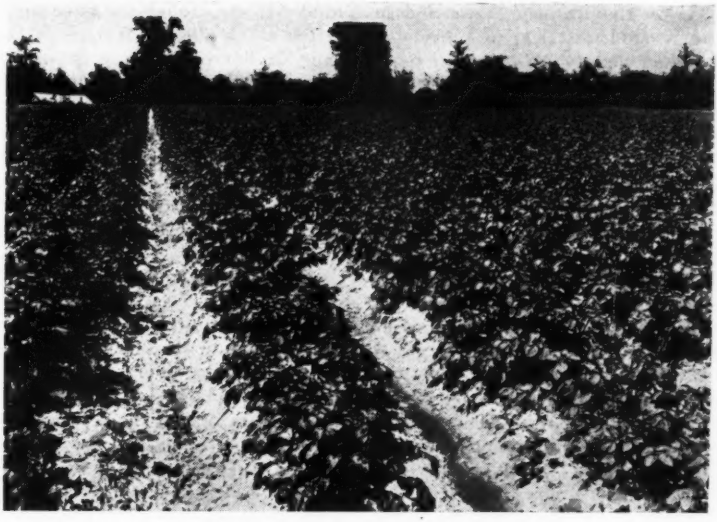
"Thoroughness," Webster states, "is the quality of achieving completeness, perfection; the ability to pass through, or to the end."

So! One is thorough if one gets to the point where one had planned to land. Nothing said about the method.

The law states that a photographer who copyrights a picture loses his copyright if he permits reproductions minus the word "copyright" and the name of the copyright-ee. But to conserve space, the law permits the use of the initial "C" of the word copyright, endorsed in a circle, thus ©.

And to further permit concentration in a limited space, it sanctions the abbreviation of the pho-

(*Turn to page 62*)



A field of Irish potatoes in Louisiana

Southern Ways with Irish Potatoes

By R. B. *Fairbanks*

THE early Irish potato crop of the South, even though small in quantity as compared to the potato crop of the North, is a very imporant one. Going on the market at a time when consumers are anxious for fresh, new potatoes, the price paid is often two or three times that paid growers in the main potato belts of the North and West.

Virginia leads in early Irish potato production with from 90,000 to 100,000 acres. Florida is second with an acreage of 25,000 to 30,000; North Carolina is usually third, with around 20,000 to 25,000 acres; South Carolina fourth with 15,000 to 20,000 acres. Louisiana, Alabama and Texas usually grow from 10,000 to 12,00 acres.

While the early Irish potato crop of the South is grown over a wide range of territory, yet it is in certain well defined sections that most of the crop is grown. In Virginia

it is on the Eastern Shore and in the Norfolk district; in Florida in in the vicinity of Hastings; in North Carolina in the Beaufort section; and in South Carolina in the Charleston and Beaufort districts. In Texas it is largely in the Wharton, Eagle Lake and Brownsville districts that the crop is grown, and in Louisiana in the vicinity of Alexandria and Bayou Lafourche. In Alabama it is around Mobile.

Inasmuch as one of the principle objects with this crop is to get it on the market as early as possible, a soil that warms up early, that is easily prepared and that is well drained, is the one commonly used. This means a light, sandy loam soil.

Planting in the Hastings, Florida section usually commences in January. In the Southern part of Florida where small acreages are grown, planting commences a month or two earlier. In South Alabama, South Georgia, and South Carolina, some growers plant as early as late January, and others as late as March 1, but February 1 to 15 is the usual time. The crop is planted a little later in the North Carolina and Virginia sections.

THE growers have found that it pays to give the soil thorough preparation. Usually a disc harrow is run over the ground a time or two before it is plowed, in order that all trash may be thoroughly chopped to pieces. After the ground is plowed, it is again harrowed. The rows are laid off from 2½ to 3 feet wide. In many sections in Louisiana, the rows are made 5 to 6 feet wide in order that a crop of corn or cotton may be planted in the middles before the potatoes are harvested.

Of utmost importance in growing this crop is the amount and kind of commercial fertilizer used. Often a few days difference in the time of harvesting may mean the difference between a profitable and an unprofitable crop. This is the reason why the growers spare no expense or effort to grow the crop just as quickly as possible. From 1500 to 2500 pounds of fertilizer per acre is generally used, some going as high as 3,000 pounds.

This is usually put in the drill a week or 10 days before time to plant the potatoes. Some apply about half of the fertilizer in the bottom of the drill, say 10 days before time to plant, and then thoroughly mix it with the soil by running a small plow in the bottom of the furrow. This is followed with a second application just before dropping the seed. The object of applying it several days ahead of planting is in order that the fertilizer may become thoroughly incorporated with the soil, and some of it be dissolved and ready for the plant roots to take up just as soon as they are formed.

In order to get a strong growth of the plant as quickly as possible, a fertilizer high in ammonia is used. This gives the plant an early start, which is absolutely essential.

A high per cent of potash is also essential. At the Florida Experiment Station it was found that where a liberal amount of potash was not used, the potatoes failed to reach full size. Where comparatively little potash was used, the development of the top of the potatoes was interfered with considerably. Experiments and tests elsewhere have proven very definitely that a high per cent of both potash and ammonia are absolutely essential in order to make the crop a profitable one. While considerable phosphoric acid is needed, yet a comparatively smaller amount of this is esential than of the potash and ammonia.

(*Turn to page 51*)

¶ *Gambling to prosperity.*

Lambing Time

By

Claude Harper

Animal Husbandman, Purdue University

ANY one in Indiana who has handled more than 30,000 breeding and feeding sheep since 1894 and has never failed to make a profit any year except one, deserves a medal. Such is the record of W. W. Miller, Whitley county farmer and vice-president of the Indiana Sheep Breeders' Association.

Mr. Miller has been entered in the Hoosier Gold Medal Sheep Club the past two years and has won a gold medal each year by producing prime market lambs when mating western ewes with purebred Rambouillet rams. He has also kept cost records on producing market lambs in cooperation with the agricultural extension division, Purdue University, for the past five years. When asked how to make lambs grow Mr. Miller said:

Heat from the ewes' bodies keeps this well-built lambing pen warm

"My lambs have a special line of business. They must grow rapidly from the time they are born in January, February and March until they go to market in May and June, if they are to reach a good market weight in that period. Lambs that grow rapidly must eat plenty, sleep a lot and exercise some.

"A lamb that does not play seldom eats enough, and a lamb that does not have enough to eat seldom sleeps enough. A lamb that does not play usually stands with all four feet drawn together, back humped and bleats and bleats. Such a lamb is not directing its best efforts toward rapid growth. Any car of lambs that is going to average 70 pounds on the market when 100 days old must possess the ability to hustle.

"In the first place a lamb must have vigorous parents. A strong sire and a capacious mother are the lamb's surety of power and vigor. A well-fed and well-bred, spirited mother feeds her lamb and protects him while his legs are still wobbly. Then there is no substitute for the milk the mother furnishes, either in regard to cost or fattening ability. There is something in the mother's milk that just makes a lamb grow. Whatever that may be is not in other feeds the little fellow can handle. Whenever a lamb comes into this old world and does not have a liberal supply of milk to draw upon, his chances for rapid growth are mighty slim. Shut off the mother's supply of milk and the lamb's credit is gone. As a business proposition, he suffers.

"Around here we try to see that a lamb has full swing. The first two weeks of a lamb's life his feed consists of milk only. At the end of that period the little fellow begins casting about for something, at which to nibble. They like to imitate their mothers. For the next two weeks he nibbles a bit of oats,

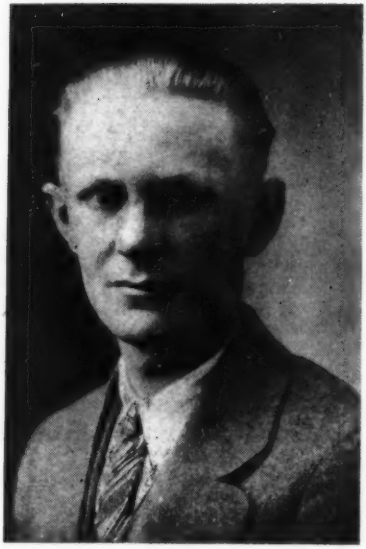
(*Turn to page* 46)

Some of Miller's ewes and 100-day old prime lambs

Money *in* Sweets

By
Gus M. Oehm

Editor, College of Agriculture,
Fayetteville, Arkansas



Howard Lawrence

HOW Howard Lawrence, a Greenbrier, Arkansas, 4-H club boy, cleared $466.95 on a single acre of sweet potatoes this year, is told in his official report as a club boy, filed with County Agent W. L. Hall, under whose supervision the acre was grown.

One hundred and fifty dollars of the amount represents prize money which he won. These prizes were offered by the three banks of Conway for the greatest production per acre of Nancy Hall sweet potatoes. Howard defeated several dozen good Faulkner county farmers in making his record.

Howard's net earnings from the acre were $316.95. It probably equals the returns from an average of 10 acres of cotton in Faulkner county. His total yield from the single acre, as certified and sworn to, was 23,031 pounds, the estimated value of which was placed at $455, and his cost of production, including an allowance for his own labor, was $138.05.

Howard's official report shows:

kind of crop—sweet potatoes.

Acreage—one acre.

Kind of soil—sandy, clay loam.

Preparation of soil—plowed seven inches deep March 20, 1925. It was then harrowed, rolled, fertilized, bedded, rebedded and rolled. Potatoes were planted April 22. Nine hundred pounds of an 8-2-5 fertilizer were used. Rows were 38 inches apart and plants were set 17 inches in the row.

Expenses of producing the crop:

Labor (self) 90 hours at 15 cents	$14.50
Labor (hired) 130 hours at 20 cents	26.00
900 pounds fertilizer	20.75
Plants, 10,278	18.00
Storing and curing	41.00
Rent of land	5.00
Total cost	$138.05

W. N. Stauffer (left) showing his potato field to friends

Potatoes, Potash,

By F. C. Gaylord

Professor of Horticulture, Purdue University

MORE than 25 years ago the Purdue Agricultural Experiment Station made a discovery that revolutionized the agriculture of northern Indiana and all muck soil areas in the country. Previous to that time, muck soils were practically worthless, but with the discovery that potash applied to this soil would make it produce enormous yields of cabbage, mint, onions, potatoes, corn, and root crops the land became a most valuable asset.

While most all of these crops were of highest quality, potatoes grown on muck soils were always thought to be of low quality and were often discriminated on the market.

Professor Sam Conner, of the Purdue Experiment Station, 20 years ago made a study of muck-grown potatoes and as a result of his work, found that the application of nitrogen, potash and acid phosphate decreased the per cent of water in the tuber on any soil. The decrease in moisture in muck soils, however, was more marked than on any other type of soil, often amounting to a decrease of as much as four per cent. Instead of muck-grown potatoes being found the most watery, they contained less water when fertilized properly than any other potatoes. Potash seemed to make the potatoes less watery than either nitrogen or phosphoric acid.

Samples tested showed that muck grown potatoes when properly fertilized were, contrary to popular belief, of the highest quality, being white, dry and of excellent composition. Not only was the water content lowered, but the ash content was considerably in-

The field that averaged 425 bushels to the acre

and Muck Soils

¶A famous potato grower tells his secrets.

creased by fertilizers, especially potash.

Even with this knowledge, the muck sections of northern Indiana did not develop as potato-growing sections. However, five years ago more work was started in development of the muck area as a potato-growing center. W. W. Stauffer, a northern Indiana farmer, started with the potato improvement work. At this time his home county was importing from 30 to 40 carloads of potatoes to meet the needs of its people.

This year, as a result of the gradual development of the potato program, his county produced enough to supply its own need besides shipping between 30 and 40 cars of U. S. No. 1 potatoes. Five years ago Stauffer wasn't growing enough potatoes to feed his own family let alone sell any to his neighbors.

Stauffer learned the secret of potato-growing in the corn belt, then passed these on to his neighbors, and in his community alone last year more than 10,000 bushels of quality spuds were produced. On one Saturday last spring Stauffer sold 700 bushels of seed potatoes to neighbors and growers in nearby counties.

It was just five years ago that Stauffer first became interested in potato-growing. The first step in starting the potato work was the securing of certified Rurals from very best sources and it had been proven that selected seed was the first limiting factor in growing real spuds. The first year Stauffer planted two acres of potatoes on virgin muck land soil.

Numerous demonstrations had proven that onions and other crops could not be grown without potash, so the ground was fertilized with 200 pounds per acre of 50 per cent muriate of potash and 300 pounds of 16 per cent acid phosphate. Eighteen bushels of certified seed were planted, the crop level, shallow cultivated and sprayed and the average yield was 265 bushels per acre.

Not satisfied with this, the seed for the next year was hill selected from this crop, kept over winter in pit storage, treated and green sprouted in the spring and the second year eight acres were planted, using same fertilizer as year before.

The second year the record yield of the four years was hung up as the eight acres measured 3,407 bushels or 425 bushels per acre, the highest yield ever recorded in Indiana. In 1922 on an increased acreage an average yield of 365 bushels of potatoes were secured.

In 1923 Stauffer planted 20 acres of potatoes, part of the crop was fertilized with 250 pounds of 50 per cent muriate of potash and 300 pounds of 16 per cent acid phosphate while an acre was given twice this much potash.

On this muck soil Stauffer's yield showed that 250 pounds of 50 per cent muriate was about the correct amount as the increased application did not increase yields sufficient to pay for the extra fertilizer.

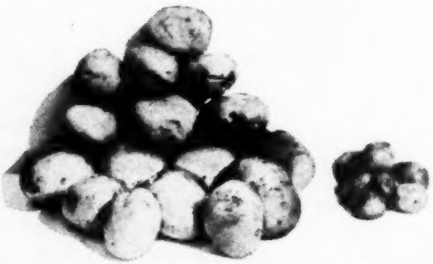
On September 15, the potato field was killed by frost but the average yield was 365 bushels per acre. In 1924, 30 acres averaged 250 bushels an acre while 30 acres in 1925 averaged 250.

Many growers in Northern Indiana felt that Stauffer's yields were exaggerated so in 1924 a field day was held on the farm just before digging time. Three hundred Indiana, Ohio, Illinois and Michigan farmers came, saw, and went home satisfied that the 375 bushels of potatoes per acre were really there without any question.

"There's no secret to my success," Stauffer said. "We owe our large yields to the use of an abundance of seed per acre, rich soil which has been heavily fertilized, for without the potash the crop would be a failure, to level shallow cultivation and to spraying.

"Any farmer who will go a little further than he thinks necessary and use good seed, good soil, liberally fertilized, and good culture can grow a real crop of potatoes."

That the gospel has spread in Indiana was clearly shown this year in that more than 300 cars of potatoes for sale were grown on muck soil. These potatoes, all grown with a liberal supply of acid phosphate and potash, have been shipped as far east as New York City and have topped the market on central and eastern markets in competition with the best the country grows.



One hill-16 No. 1's, 7 seconds

We Know Cooperation Pays

The Manager Himself

By *Robert McCormick*

Manager, Gallia County Fruit Growers' Cooperative Association, Gallipolis, Ohio

THERE are still a few farmers in our section who do not believe in cooperation. But their numbers are decreasing every year, and we believe that the time is not far distant when all of them will fall in line and adopt the only plan whereby they can realize a profit on their investment.

There was a time when farmers could go it alone, but that time is past. The increased cost of labor, equipment, and transportation has made it so the average farmer, with small capital, can hardly make expenses, much less any money.

As the result of cooperation, several apple growers of our county, who until three years ago were plodding along in the old way, are now getting the best prices for their apples and are making a good profit every year.

The Gallia County Fruit Growers' Cooperative Association was formed three years ago with three of the leading apple growers of the county as members. Since that time two more have joined, making a total of five of the most extensive and prosperous growers in the county. We are looking for others to join us later, and we are confident that all the apple growers of the county will sooner or

(*Turn to page* 48)

Friday made easy in the farm home

Why

By Arthur P. Chew

United States Department of Agriculture

IN an age of rapid electrical progress, farm electrification in the United States is proceeding at a snail's pace. This country develops more electric power than all other countries combined, and does it cheaper. The average cost of electricity to the American consumer today is 8 per cent less than before the war, while other family expenses have increased 65 per cent. Fuel, a big factor in the cost of producing electricity, has doubled in price. Nevertheless, electricity has hardly begun to play a part in agriculture although it is revolutionizing urban life.

Hope for a remedy may be seen in the fact that people whose views and actions have weight are diligently seeking one. Public utility companies are not content that electric service should be monopolized by city dwellers. Farm organizations, spurred by the demand of their members that the conveniences of civilization should no longer be denied to them vigorously, are taking up the matter. Agricultural engineers and scientists are urging farm electrification because they have a lively appreciation of what it can accomplish. Aside from pressing economic problems, there is hardly a question of interest to farmers that is more discussed today than the question how to electrify the farm.

The first step in curing any ailment is to get it diagnosed. A whole host of diagnosticians are studying the farm electrification problem. They are approaching it from a hundred angles. They are inquiring what is the responsibility in the matter of the power companies, the farm machinery manufacturers, the farmers themselves, and the government. Their studies have already cleared up many obscure aspects of the problem, and pointed out the general lines on which a solution must be sought.

Electricity was first supplied to farms in this country about a quarter of a century ago. This progressive step aroused hopes that have not been realized. Only about 500,000 of the six and a half million farms in the United States to-

¶ *Chew discusses the cost of "juice."*

Farm Electrification Drags

day have any kind of electric power equipment. The others are still unable to take advantage of such inventions as the milking machine, the power churn, the power pump, the power-driven washing machine, the vacuum cleaner, and the electric flat-iron, to say nothing of electric light. From 1890 to 1924 the primary horsepower used on

A farmers' cooperative electrical power plant in Pennsylvania

farms practically doubled, but very little of the increase was represented by electrical energy.

It is the farm women, of course, who have chiefly suffered by the failure to electrify the farm. Electric power is the only kind of power available for lightening the burden of house work, but field work can be lightened by animal and gasoline power. Indeed, the fact that there are substitutes for electric power in nearly all the farm jobs that men have to do is the chief reason why electric power has not yet been made generally available to farm housewives. This is not a charge of selfishness against the men. It has not been in their power to speed up farm electrification, because heretofore they have lacked sufficient uses for it outside the home.

Electric power can not be furnished cheaply except in large volume. This was discovered by the power companies when they began supplying current to farmsteads located near their transmission lines. They found that it didn't pay to put in transformers and service lines to farm homes simply to furnish power for lighting and operating the washing machine. They consequently declined to do the necessary installation work, or demanded prohibitive charges for it. Sometimes they asked as much as $1,000 or $1,500 for running a service line to a farm home.

When the farmers objected to such charges, the companies said to them, "Use electric power for farm operations as well as for work in the home and we shall probably be able to quote you better terms." Usually, however, it paid the farmer better to rely on gasoline power, since it was cheaper as a rule and also available for traction as well as stationary uses, whereas electric power was suitable only for stationary work.

Farm electrification moves slowly because the power companies cannot get the average farmer to use enough current to give them a reasonable return on their investment without making a very high charge for the energy consumed. Farmers, naturally, will not substitute electric for other forms of power without inducement in the shape of attractive rates. The result is that farmers number only a small proportion of the new customers gained by the power companies every year.

NEARLY two million new users of light and power became customers of the electric companies in 1924. The percentage of farmers among them has been estimated at less than 5 per cent. In a few states, under exceptional conditions, farm electrification is making headway. In California cheap power and the fact that most farms need electricity for irrigation or drainage pumping have brought the number of farmers using current up to nearly 50 per cent of the total.

The many uses for electric power in dairying have given a boost to farm electrification in Wisconsin. In other States, however, the movement is marking time. Moreover, it is likely to continue to mark time until additional uses for electricity are developed on the farm. While its use is confined to the home, its cost will be high and sometimes prohibitive. Volume is necessary for the economical production and transmission of electricity.

This is so well realized by the electrical industry, by farm organizations, and by State and Federal agencies that joint investigations are under way in more than 15 States to find new agricultural uses for electricity. Power companies, manufacturers of electrical equipment and farm implements, and farm organizations are cooperating in the work.

(*Turn to page 50*)

Reclaiming the East

By
Frank George

United States Department of Agriculture

Hubert Work

¶A look into the future.

RECLAMATION for a growing nation of 110,000,000 people should, from now on, include recapture and restoration of lost soil fertility."

This principle enunciated by Secretary of Interior, Dr. Hubert Work, is to be the keynote, henceforth, of the Government's reclamation policy. As a first step in putting it into effect, a comprehensive study is to be made into the entire subject of the reclamation of lands which have been lost to agriculture through disuse.

Of the 1,000,000,000 acres of arable land in the United States, there are 452,000,000 acres of uncultivated land, much of which consists of neglected, exhausted or abandoned areas, according to Dr. Work. A considerable portion of this land is situated at the doors of the great cities of eastern and central states and can be reclaimed easily with the use of fertilizer and proper cropping systems.

"Within sight of the city of Washington," he says, "are thousands of acres of neglected lands in the state of Virginia, worn out and abandoned, yet susceptible of regeneration. In North Carolina 22,000,000 of the State's 31,000,000 acres are unimproved . Only 8,000,000 acres are in farms. Out of

19,500,000 acres in South Carolina but 5,000,000 acres in 1924 was crop land, scarcely more than one-fourth. Tennessee cropped less than 8,000,000 of its 26,000,000 acres.

"In the New England states several million acres of land have reverted to pasture. Of the 3,000,000 acres in Connecticut 497,435 acres were harvested in 1924. Vermont harvested 1,124,000 acres in 1924. Added to this were approximately 1,000,000 acres of unimproved land in this state lost to agriculture through non-use. Its pasture lands total 2,175,000 acres. New Hampshire cropped in 1924 but 542,846 acres out of 2,262,000 acres in farms. The pasture lands in this state comprised over 1,000,000 acres. Maine, with an area of 5,164,000 acres in farms, cropped only 1,659,000 acres last year.

"THE major portion of this untilled land is susceptible to being reclaimed. Much of it already awaits the plow. Other portions need clearing of second growth. In most of these states are thinly-peopled regions, the inhabitants living on a soil skimmed of its cream, that with fertilizer may be made producing farms. Large concentrated populations afford a ready market for food products from these lands, with short truck hauls and consequent low rates for transportation."

The new program does not contemplate taking away from the West its eastern markets. The rapid industrial growth of the West which is now taking place will mean the development of new markets there which will consume larger quantities of farm products. Ultimately, most of the vast irrigated areas of the West will be required to take care of his local demand.

Meantime, the population of the rest of the country is also gaining at a rapid rate—an increase of 1,400,000 people annually for the country as a whole—and these people will have to look to new sources for much of their food supply. Reclamation of the vast areas of unused arable land near these increased centers of population is seen as a solution of the problem.

The time will come eventually when all the Nation's arable lands will be needed for agricultural production. It is this long time view which the Government is now taking, and which is receiving the approval of economists everywhere. It contemplates, also, the development of production closer to consumptive outlets,—a fundamental economic principle, the operation of which will go far in helping solve distribution problems.

"In 150 years," Dr. Work says, "a virile, resistless, acquisitive people have swept our country from the Atlantic to the Pacific Ocean. From Jamestown and Plymouth they have pushed the frontier before them until it has vanished. The wild turkey vanished before the domestic hen. Sheep replaced deer. The buffalo gave way to better beef breeds; grains and fruits were substituted for nuts and wild berries.

"We now realize that those people who have traveled for generations with the sun in their faces, have depleted the soil, exhausting and abandoning much of it. Already it must be artificially fed even in the Middle West, where it was once thought to be inexhaustible. In New England it has largely reverted to pasture. In the South, even the renter has left the hills, too poor to sprout grass roots to hold the earth, to erode in the rain. We have mined the soil from both sides, its surface and beneath it, until thoughtful men are alarmed for our future resources.

(*Turn to page* 53)

Sixteen spraying outfits in one Indiana County

RENOVATING *the* FARM ORCHARD

By C. L. Burkholder
Purdue University, Lafayette, Indiana

¶ *The third and last story of this series.*

NOWADAYS an apple tree simply must be sprayed if any edible fruit is to be expected. The labor of pruning, fertilization and straw mulching the farm orchard is wasted if insects and diseases are permitted to harvest the crop.

The equipment and actual operation of a barrel sprayer is no more difficult than many other farm practices. However, the great drawback comes from the necessity of applying the summer sprays at very definite intervals and mostly during the rush of spring plowing and seeding on the farm.

As the farm orchard is primarily for the production of fruit for home use only, it seems logical that the size of the orchard be reduced to not over ten or a dozen trees. This will simplify spraying

to the point where the application of any one of the summer sprays should not take over two or three hours at the most, provided a properly equipped barrel sprayer in good working condition is available.

Cheap farm tools are always a poor investment and this is just as true of a barrel spray outfit. It should be one that is easily and quickly removed from the barrel as it is important always to slip the pump out of the barrel after using it and to pump clear water through both it and the hose rod and nozzle.

Never buy less than 30 feet of ⅜ inch special spray hose. The length of the rod will depend on the height of the trees to be sprayed. Rods under eight feet in length can be made of ordinary gas pipe. Long bamboo rods are light and good for tall trees. Always use a 45-degree angle disk nozzle with this type of spray outfit.

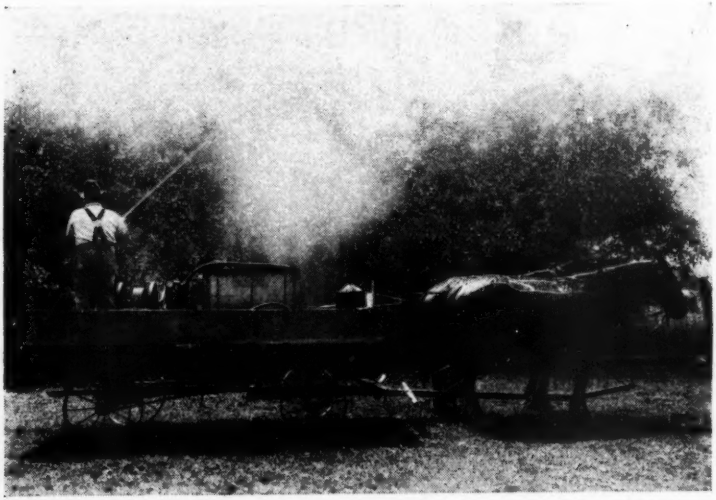
A shut-off at the base of the rod completes the equipment. A fair sized apple tree is easily capable of producing 20 bushels of fruit and at $1.50 per bushel, one year's crop from one such tree will more than pay for this equipment if the work of mounting the pump is done at home.

Where San Jose Scale is prevalent it is necessary to apply a dormant spray which can be done any time after the leaves have all dropped in the fall and before the buds open in the spring. In the central western states the summer sprays on farm orchards are applied when, (1) the blossom buds are beginning to split open, (2) imediately after the petal fall, (3) two weeks after the petal fall and (4) during the early part of July.

It is best to follow the spray schedule outlined by each State Horticultural Department. A copy of such schedules are sent out free of charge by all State Extension Departments.

All sprays must be applied from the inside of the tree and then by walking around the outside of the tree with the spray rod the entire surface of the tree inside and out

(*Turn to page* 49)



A convenient outfit for the farm orchard

¶Read why this orchardist believes in "setting a good table" for his apple trees.

FEED Hungry Trees

By William L. Reed

Sebastopol, California

FOR some time past my King apple trees—32 years old—had not been doing well, making practically no new growth, but showing considerable die back; this die back extending well back into the old wood. These trees bore a crop only every other year. The apples produced were of good size, with an average production per tree of from 400 to 500 pounds. However, they were of indifferent quality, and showed a large proportion of water core. In the off years, the trees produced nothing.

In the Fall of 1923, having come to the conclusion that it was not a diseased condition, but a lack of plant food that was causing the trouble in my orchard, I ordered one ton of a commercial fertilizer with a guaranteed analysis of four per cent Nitrogen, 10 per cent Phosphoric Acid and 10 per cent Potash. The Potash was from the German Sulphate of Potash, which, as soon as received, was applied to a block of 100 King apple trees.

Application was made in order to get the benefit of the winter rains, as this place is not irrigated. The wisdom of this fall application was plainly shown, as where the same formula was applied in the Spring, after the heavy rains were over, comparatively little showing was made.

The first result noted was an excellent setting of fruit in the Spring of 1924, which should have been the off-year. The crop harvested averaged 400 pounds per tree as against nothing from those untreated. The apples were larger, of better color, and finer flavor than usual, also were free from water core.

THE condition of the trees was much improved in every way. The tendency to die back ceased. Foliage was a deeper green with larger leaf. Fruit spurs and bloom buds filled out plumper than before they ever had been. This improvement in bud and spur was

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Beautifying

Where a beauty specialist is required

"WE have set out to beautify the grounds surrounding our farm homes. That's what farmers in Medina county, Ohio, told me.

I found that quite a number of farm families in the country were really working at this job in earnest. I found, also, that they were doing this under the leadership of H. C. Brunskill, county club leader.

Before taking his present job, Brunskill had served the county for several years in the capacity of cost accountant, helping a group of farmers keep records on their farming operations. Being a real human sort of a fellow he became rather intimately acquainted with many of the hopes and desires of the farm families with whom he worked.

It had developed during the conversations in connection with the farm business that the farmers, their wives and children desired that their home grounds should be more beautiful. Some of them had done a little planting but they had not gone about it in any thorough manner with a view of having a complete and systematic layout when the planting would be completed.

Brunskill showed a keen interest in their landscaping problems. Perhaps the fact that farm engineering had figured strongly in his college education gave him something of a natural aptitude for this work. He was willing to do anything that his training or experience might make possible in helping out on this project. He also

the FARM HOME

By H. E. Mc Cartney

Setting out shrubs at the Fenstermaker home

offered to secure expert help from the specialists of the agricultural college. This help would consist in laying out the planting and in suggesting the trees, shrubs or plants that should be used.

"Every farm home offers an opportunity for individual planting," the Medina county folks said. "No two of our farm yards are exactly alike in size, shape and slope. There's where we have a big advantage over the people in the cities. Our city cousins usually live in homes where their only opportunity for landscaping consists of a small square area in front of the house. Each yard on any street is very much like the others in the same row of houses."

The idea grew and took more and more definite form as Brunskill visited each of his farmer cooperators each month in regard to the farm records. By the time the project of keeping cost records had been completed, quite a number had lined up to make over the grounds surrounding their farm homes. Also the county needed a club leader. The position was offered to Brunskill and he accepted.

THE landscaping as it had been worked out in the plans made at the various homes called for more than front yard planting which, too often represents the main effort at the farm home. It took into account the sides and the rear

(*Turn to page* 44)

Miss Smith WINS

By

C. E. Gapen

United States Department of Agriculture

TO the long list of important Smiths who have contributed to the development of America, beginning with the well-known John, there is now added the name of Frances, eighteen-year-old farm girl of Blaine county, Oklahoma.

A few weeks ago she made a triumphant return to the Smith farm three miles west of Gerry, Oklahoma, bringing with her honors won at the International Livestock Exposition, Chicago, where she had been selected as the outstanding 4-H club member among 600,000 in the United States. Reports from the neighborhood say that Gerry and nearly the whole county turned out to welcome this outstanding club girl.

MISS SMITH has spent 17 years of her 18 on this Oklahoma Farm. She is the oldest of a family of five children, and now is senior in the Gerry High School. A bankers' scholarship which she won in club work will start her off at the Oklahoma A. & M. College next fall.

This is the second year that the big cup brought home by Miss Smith has been won by Oklahoma. Last year the cup, offered then for the first time, was won by Ford Mercer of Wellston. It is to be given each year to the farm club member displaying "greatest quality of leadership in home, club and community life."

FRANCES SMITH has been a member of the willing workers club at Good Hope Country School 7 years. Her work has been varied beyond that of most club boys and girls, including 7 years of poultry projects, member of corn, pig, grain sorghums, potatoes, sewing, canning, food preparation, and home improvement.

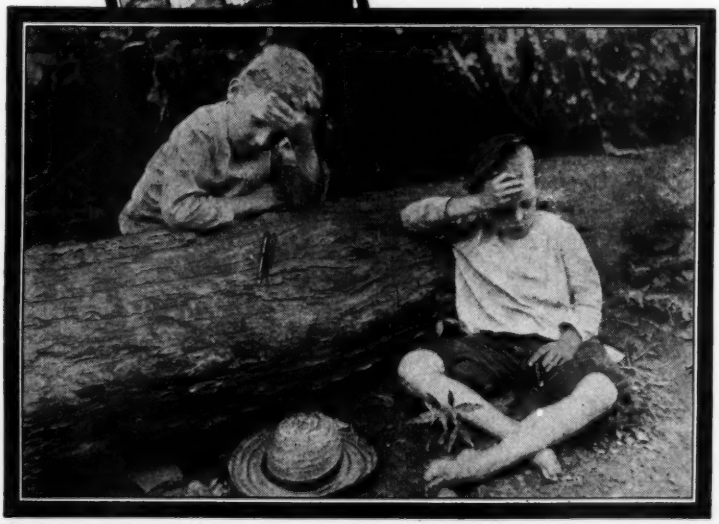
During the years as member of the club she has won prize money totaling $478.25 at community, county and State fairs; 6 trips to the Oklahoma State fair; and 300 ribbons. Two thousand three hundred dollars is the estimate she put on the sale value of her farm and home products produced in the last 7 years. She has earned her way through high school.

Better Crops' ART GALLERY of the month

Introducing Miss Smith—Miss Frances Smith, the 18-year-old Oklahoma club girl who is the winner of the 1925 leadership contest.

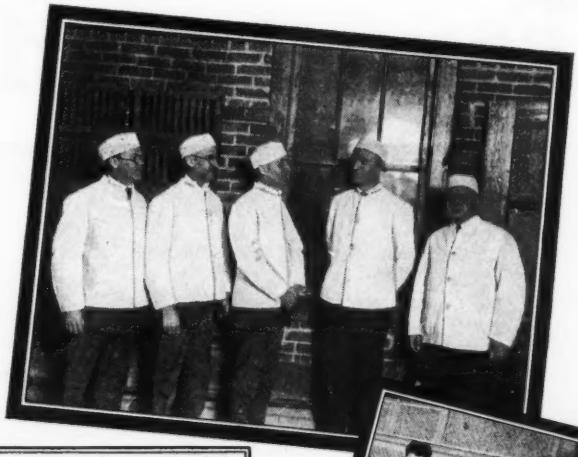
Old mountain Chief of Glacier National Park reservation, who grows wheat where he used to kill buffalo.

Cooperation is this farmyard theme — a prize collie dog and his two friends.



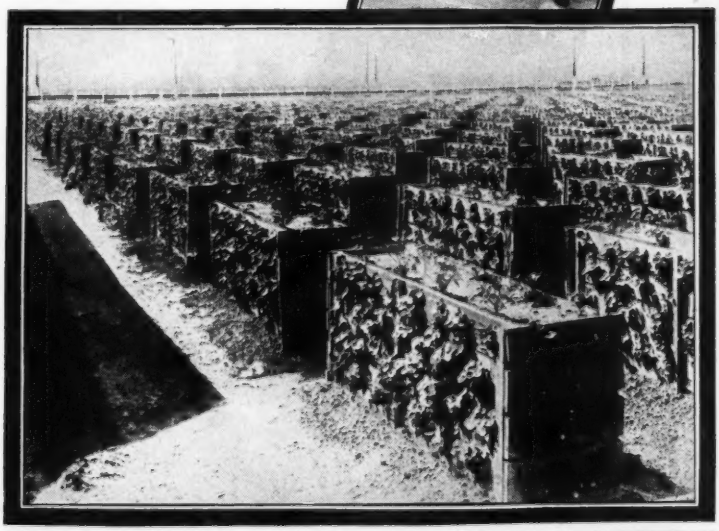
THE FIRST CIGAR.

Reminiscent of every man's boyhood is this picture of "adventure". All that is lacking are the resolves being formed.



Some distinguished "milkmaids" in a recent Indiana contest. (See page 63)

Gov. McLeod of South Carolina honoring Willie Beland, who grew best 10-inch corn in seven Southern States.

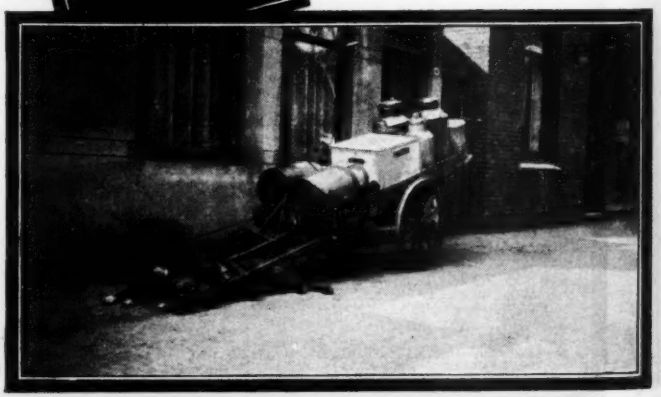


Three acres of strawberries in one—Florida's newest wrinkle in growing first quality winter berries with more sunshine and freedom from dirt.

Farming in

Ruggedness is built into the very frames of Simmental cattle grazing on the grassy slopes of these peaks.

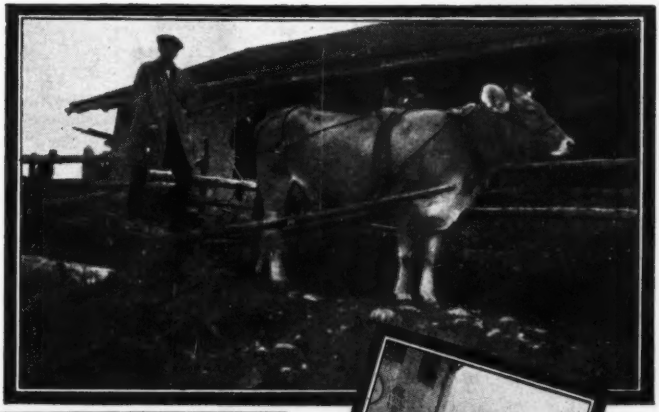
One end of this structure houses the Swiss farmer's family and in the other is quartered his herd of Simmental cattle.



"DOGGONE" TIRED

City milk delivery is an unknown or lost art in European population centers. Milk is delivered in bulk, and the dog wagon is a common sight.

other Lands—



Not infrequently the Brown Swiss, like the famous Simmentaler cow, is called upon to do double duty.

Into this Swiss whey tank, whey and excess buttermilk are run for delivery to outlying farms.

MILK FOR LONDON

Milk from this English push cart is drawn from a faucet or dipped from the can as the customer orders. Dairymen predict the early passing of this system.

Miss Opal Code of Texas, plowing her way through college. Miss Code earns her own living as well as that of six members of her family.

Members of extension staffs of eastern and mid-west agricultural colleges in conference with Secretary Jardine at Washington. The conference pertained to forestry.

A Word About—Reviews

WITHOUT doubt county agents and other agricultural extension workers find it difficult, as we do, to keep up with the developments in modern agriculture. Valuable information is now published from a great many centers, the chief of which are the United States Department of Agriculture and the 69 agricultural experiment stations.

THESE bulletins represent the results of the soundest work in a variety of agricultural fields—chemistry, soils and fertilizers, bacteriology, plant pathology, genetics, field crops, horticulture and forestry, entomology, animal husbandry, agricultural engineering, rural economics, and so on.

WE, ourselves, must keep abreast of all that is doing in the broad field of CROP PRODUCTION. In future issues, in our Review section, we intend to pass this information on to our readers. We purpose that it become a reliable reference and save the busy extension man time in getting information on the most recent developments in crop production all over the United States.

IT has always been our policy to review some of the bulletins each month. With this issue, however, we have added to them and made the first list. When properly organized, during the next month or two, our Review section will carry short editorial comment upon some of the most practical and important bulletins, and list all recent publications of the United States Department of Agriculture and the state experiment stations relating to—SOILS, FERTILIZERS, ECONOMICS, CROPS, CROP DISEASES and INSECTS.

THUS by following this section of BETTER CROPS, our readers will have a clear picture of what is being done in these five particular fields of more profitable agriculture.

Farm Crop Costs Estimated Higher

LOWER yields resulted in a higher cost of production for the majority of South Dakota farm products in 1925 according to estimated figures issued by the farm economics department at South Dakota State College.

The cost figures are based on actual cost records kept on a number of farms in Kingsbury county during 1922, 1923 and 1924 with the 1925 estimated yields of the United States Department of Agriculture substituted for the yields of 1924. The cost records include man and horse labor, machinery, land rental, seed and twine, and interest charges.

THE cost of producing alfalfa hay in 1925 was estimated at $10.35 per ton. The cost in 1924 was only $8.13. Barley cost 50 cents per bushel last year and it is estimated that the same cost will hold for this year. Potatoes were produced in 1924 for 44 cents while this year it is estimated that the cost was 53 cents per bushel. Wheat cost 82 cents per bushel in Kingsbury county last year, but cost around $1.05 this year. Flax also showed an increase in cost of production from $2.16 in 1924 to $2.75 in 1925. It was estimated that oats were grown for 33 cents last year and increased to 35 cents this year. Corn cost 64 cents per bushel last year and 75 cents per bushel in 1925.

"THE basic factors of production, such as labor, use of land and equipment, seed cost and interest charges do not vary a great deal from one year to another", the farm economists state. "Differences in production will raise or lower the harvesting cost somewhat but labor and other factors this year compared favorably with 1924. The reason for the increase in cost of production in most cases has been due to the lower yields of nearly all products than was the case last year."

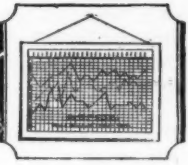
The acre yields used in making this cost estimate are as follows: wheat 22 bushels, corn 25 bushels, oats 48 bushels, barley 30 bushels, flax 6.19 bushels, potatoes 83 bushels, and alfalfa hay 1.3 tons per acre.

Farmers who have produced crops this year that average more than these figures indicate have probably produced their crops at a lower cost than those given. This means that many farmers of South Dakota were probably able to produce wheat, potatoes and alfalfa hay at a profit this year. Oats, barley, corn and flax were probably grown at a loss on many farms.

"SUCH figures emphasize the fact that good cultural methods and farm management practices that increase acre yields also tend to

(*Turn to page 60*)

AGRICULTURAL DEVELOPMENTS



By P. M. Farmer

Why the "Pop"?

Scientists of the Department of Agriculture are not exactly certain as to what makes pop corn pop but they think it is the steam generated from the moisture within the starch grains. Formerly it was supposed that the great explosion in the kernel when heated was due to the expansion of oil.

Now it is thought that steam generated within the cells exerts great force before being released by the breaking of the tough covering of the kernel. The expansion of the air inside the kernel is also thought to be a factor in the popping.

In order to have corn pop nicely there must be a certain amount of moisture. Old corn sometimes does not pop because it is too dry, but the popping quality may be restored by sprinkling corn lightly with water or it may be left outdoors until it absorbs moisture from the air.

Area TB Testing Saves Pigs

The Department of Agriculture and the various states have been pushing the area tuberculosis testing program with great vigor during the past few years and results obtained amply justify the enthusiasm for this method. Packers have offered better prices for hogs from regions free of tuberculosis and figures now obtainable from various sections show that this is good business.

In Kansas and Nebraska where counties have been accredited, reports show that the percentage of hogs from those areas retained by inspectors on acount of tuberculosis has been reduced. At the Kansas City market records show that the number of hogs in these areas has been reduced 89½ per cent and in the percentage of condemnation in hogs from these counties the reduction has been 62½.

Buckeye Farmers Use Better Fertilizer

The Ohio Agricultural College has been trying for some time to induce farmers of the state to buy approved high-grade fertilizer and has recommended what has become to be known as the Ohio Standard Dozen Fertilizers, these fertilizers being considered sufficient to meet the needs of practically every Ohio farm.

In 1922 farmers of that state bought 122,414 tons of commercially mixed fertilizer and only 16 per cent of this quantity was of the fertilizers listed in the state's standard dozen. During the past year, however, Ohio farmers bought more than 164,000 tons of commercial fertilizer, 47 per cent of which represented those analyses recommended by the state.

The Ohio soil specialists say that if fertilizer companies would concentrate on fewer analyses the price of fertilizer could be cut. At the present time there are more than 100 different fertilizers, from the analysis standpoint, on the market in that state and 64 of them during the past year had a total sale of only 12,000 tons. those not included in the dozen were eliminated either because they were too dilute to be economical,

were not satisfactory from the factory point of view, or because there was no real demand for them.

Plants Not Speeded by Electricity

Man has been able to go much faster himself than he traveled when the ox was his principal assistant; he has been able to make pigs and cattle and sheep grow faster, but plants, although the yield per acre has been increased, cannot be made to move much faster. For nearly a hundred years he has thought about the possibilities of electrical treatment of the air and soil to make plants speed up.

In the last few years, stimulated by reports from England of the successful use of a charged wire network above growing crops, the United States Department of Agriculture has been doing work along this line, but without encouraging results. The department has carried on tests of this sort for eight years and in no case has it been able, either through treatment of soil or air, to produce any measureable response in plants.

Ten Tons of Tomatoes

Last summer the Ten Ton Tomato Club of Hancock county, Indiana, demonstrated that the average grower of that crop is not getting anywhere near what his land is capable of producing. The two leaders in the club were John A. Cottey and George Rabe, who produced yields of 15.88 and 14.03 tons per acre respectively. The packing company, which has been encouraging the club, distributed $2,000 in bonuses at the rate of $1 a ton to all members who secured a yield of ten or more tons to the acre on an area of not less than three acres.

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Dr. Joseph T. Duvel, in charge of Grain Futures Administration, United States Department of Agriculture

Foreign and International Agriculture

The purpose of this department is to help us understand the scientific, practical, and industrial agriculture of other countries and the international developments which result. The editor believes that such knowledge is now of the greatest importance in our agricultural prosperity. Every care is taken to insure accuracy—both of facts and their interpretation.

RECENTLY two conferences on the farm surplus problem came to exactly opposite conclusions. The Illinois State Conference met in Chicago. The resolution adopted was as follows: "We join with the other Agricultural Surplus States in asking Congress to enact a resolution under which the farmers may secure an American price for that portion of our crops consumed in America independent of the world price for the surplus."

The Fourth National Conference of the National Council of Farmers Cooperating Marketing Associations met in Washington, and on January 16 went on record as opposed to any legislation at this time dealing with farm surplus products.

This shows the difference of opinion that exists on vital problems. Undoubtedly one of the great needs is accurate data on worldwide crop production. In all such discussions, the export of the crop surplus seems to invite a more unanimous opinion than any other proposed solution.

What parts of the world could absorb the surplus? For the ultimate solution of the problem on a scientific basis, it is of vital and practical importance to know thoroughly what crops other countries produce, what their crop needs are for the maintenance of their population, and what their crop requirements are from other countries.

For these reasons, the work of the International Institute of Agriculture at Rome has much more than an academic bearing on such problems.

As an instance of this usefulness, we have received recently the International Yearbook of Agricultural Statistics 1924-25, a ponderous, dry-looking volume, perhaps of some 475 pages. Yet it probably represents the **soundest** knowledge available in one volume on the crop producing capacity of the total arable land of the world. Such statistical work might well be, and undoubtedly will be, extended from a statistical viewpoint, but in the meantime it is very gratifying to know that such a comprehensive basis of fact is obtainable. The Yearbook contains a very interesting little table showing each continent's percentage of the total area and population.

	Area	Population
Europe	7.3	24.5
North and Central America	17.0	8.2
South America	14.5	3.5
Asia	31.9	55.8
Africa	22.8	7.5
Oceania	6.5	0.5

Another table shows the very interesting fact that 39.2 per cent of the world's area is inhabited by approximately 80 per cent of the

world's population, while over half of the world's area, namely 54.3 per cent, is inhabited by only 19.2 per cent of the world's population.

Area	Population	
39	80	Europe-Asia
54	19	N. & S. Amer.-Africa

These few figures bring out very clearly the fact that there are two types of surplus, namely a surplus of human life in some parts of the world and a surplus of crops, or the means of sustaining life, in other parts.

The problem is clearly to obtain an equilibrium between population and the food crops to maintain life. In other words, an excess of crops is built up in some parts of the world and people are in too great numbers in other parts. The conclusion arises, can an equilibrium between the two be obtained in one country alone without reference to others. Can any solution of the problem of surplus crops in one part of the world, hastily conceived and planned, be of any permanent advantage? Any real solution of the surplus of human life in one part of the world, or surplus of crops in other parts, demands years of hard study and actual facts, the conclusion of a great deal of data and the most impartial application of the scientific methods of statistical analysis.

Any effort, therefore, to gather together the world's figures is a beginning, the importance of which cannot be overestimated. Such work merits the support of the keenest minds, not only because of the fact that such data is collected in one place, but because it stimulates a greater interest in such work and a uniformity of vital statistical method, which is all-important.

It is interesting to note that the population of the world, between the years 1913 to 1924 has increased by 67,000,000 people. All the continents have increased their population, with the exception of Europe, which has decreased by 2.8 per cent. North and Central America has increased by 13.8 per cent, South America by 16.5 per cent. Thus the trend of growing population is in a measure slowly adjusting itself to a better equilibrium between population and crop production.

Another very important part of the book gives the apportionment of acres, agricultural production and numbers of live stock in various countries. These tables "assist in forming pictures of the agricultural physiognomy in each country." The details are comprehensive. In total they represent 92.2 per cent of the population of the world and 79.6 per cent of the territorial area. Of the 40 countries listed, Canada has the largest total area, Brazil the second and the United States third.

The highest percentage of arable land of the total land area of each country is Denmark 61 per cent, Hungary follows with 58 per cent, and the Indian States 58.6 per cent.

Another part of the book gives the area of production of the various crops. These figures are given in two groups. The first group gives separate figures for the different states, the second contains summaries for each continent and hemisphere and for all countries combined. Useful tables show the excess of imports over exports. Other details give prices of the leading crops, rates of ocean freight, fertilizers and chemical products useful in agriculture.

The Yearbook is thus a very comprehensive survey in great detail of the facts concerning the vital statistics of crop production, and as such is a valuable contribution to the basis on which some of the important agricultural problems will eventually be solved.

REVIEWS

Fertilizers

It is interesting to observe to what extent farmers have followed the high analysis recommendations adopted during the last few years. Bulletin No. 270 "Report on Inspection of Commercial Fertilizers," 1925, Connecticut Agricultural Experiment Station, New Haven, Conn., shows that of 255 official samples of complete fertilizers examined, somewhat less than half have fallen in the "New England Standard Nine." The proportion of "standard formulas" being used has increased. In Connecticut the proportion was 36 per cent in 1924 and 44 per cent in 1925.

Texas Bulletin No. 335 entitled "Commercial Fertilizers in 1924-25," Texas Agricultural Experiment Station, College Station, Texas, also shows that the use of the 11 standard formulas recommended in Texas has increased in 1925. It would seem, therefore, that this movement to simplify and standardize the analysis of mixed fertilizers is making progress in influencing the kind of fertilizer used. Both these bulletins also contain interesting information on the total sales of fertilizers in Connecticut and Texas, the analysis of samples and fertilizer sold by different manufacturers, explanation of all terms used and other useful data.

The report on fertilizers used in Arkansas, published by the Department of Conservation and Inspection, Little Rock, Arkansas, shows that the consumption of fertilizer had increased in that state from 25,000 tons in 1908-09 to 122,742 tons in 1924-25. Thus is the consumption of commercial fertilizers trending westwards.

Two other bulletins discuss the very important matter of substituting commercial fertilizers in the place of stable manure.

Rhode Island in Bulletin No. 201, Agricultural Experiment Station, Kingston, R. I., shows that the yield of early truck crops was larger when 16 tons of manure and fertilizer were applied than when 32 tons of stable manure alone were used. Figures are given for cabbage, tomatoes, lettuce, beets, spinach and celery.

Along the same line an interesting Bulletin No. 48, published by the Virginia Truck Experiment Station, Norfolk, Va., shows that on spinach in Virginia, stable manure is no longer widely used. As the result of experimental work, it is advised that instead of delaying fertilization until the plants had been thinned, it is better to apply the fertilizer broadcast before the buds are formed. The materials and pounds per acre that should be used, are given. Subsequent top dressings which depend upon various factors are recommended. It would seem from this work that it is possible to profitably substitute commercial fertilizers for part of the manure commonly used on truck crops.

Bulletin No. 155, "The Results of Some Fertility Experiments on Oklahoma Soils" of the Oklahoma Experiment Station, Stillwater, Oklahoma, gives some preliminary results on experiments with fertilizers, both commercial and farmyard manure. This series of experiments were conducted on the Kirkland loam and Kirkland silt

loam. One very interesting experiment is the continuous growth of wheat since 1898. The yield after 26 years when no manure was used, was 12.84 bushels per acre. The results of this work are very practical and show that in Oklahoma the use of a crop rotation is essential. It has given a good increase in yield for all common crops.

Attention should also be called to two technical bulletins, both by the Agricultural Experiment Station, Michigan State College, East Lansing, Michigan, namely bulletin No. 71 "Growth of Lettuce as Influenced by Reaction of Culture Medium" and Bulletin No. 73 on the "Adsorption by Activated Sugar Charcoal." These are valuable publications for research workers.

Two very practical little circulars have just been issued by the North Carolina Extension Station on the "Composition and Fertilizing Value of Farm Crops and other Farm Materials" and on "Fertilizer Recommendations for North Carolina Soils." They are well arranged and contain in a small space a great deal of information.

Soils

Great economic loss is evidenced by vast areas of productive soils going on the scrap heap because of alkali injury. Circular 292 "Alkali Soil" by P. L. Hibbard, Agricultural Experiment Station, Berkeley, California, presents in brief form best available information on alkali soils with respect to origin, nature, effect, treatment and cropping. By proper attention to certain aspects of cultivation, fertilization, drainage and cropping damage from alkali may be negligible.

Other helpful information is to be found in:

"Fruit Tree Soils," Ohio State University, Columbus, Ohio, Timely Soil Topics, No. 91, December, 1925. M. V. Bailey.

"What the Illinois Farmer Can Do to Learn About His Soils," University of Illinois, Agricultural College and Experiment Station, Circular No. 302, November, 1925. E. E. De Turk.

Crops

At this time of year, one of the chief interests of the agricultural mind is the 1926 crop production. What crop will make best use of the land? What new information has been brought forth on rotations, cultural practices, and profitable management?

Among the recent experiment station publications in this trend is a September, 1925, Bulletin 133, "Corn and Soybeans as a Combination Crop for Silage," by W. L. Slate, Jr., and B. A. Brown of the Storrs Connecticut Agricultural Experiment Station.

The conclusions in this bulletin are based on four year's work and indicate that $10 per acre may be added to the value of the silage by planting soybeans with the corn. However, the authors do not feel that the combination is practical unless the soybeans can be planted at the same operation with the corn, on land not weedy enough to necessitate hand hoeing, when cultivated only one way, and where a binder can be used for harvesting.

"Cotton Variety Tests in Oklahoma," Bulletin No. 154, Oklahoma Agricultural Experiment Station, Department of Agronomy, Stillwater, by Glen Briggs, is a new bulletin full of information for the cotton growers. The Oklahoma Experiment Station, as a result of its experimental work, is in an admirable position to give advice regarding varieties and the source of pure seed.

Other bulletins include:

"The Growing and Handling of Head Lettuce in California," University of California, College of Agriculture, Agricultural Experiment Station, Berkeley, California Circular 295, September, 1925. H. A. Jones and E. L. Garthwaite.

"The Fruiting Habits and Pruning of the Concord Grape," Agricultural Experiment Station, Michigan State College of Agriculture and Applied Science, Horticultural Section, Technical Bulletin No. 69, October, 1925. N. L. Partridge.

"Flax Facts," Agricultural Experiment Station, North Dakota Agricultural College, Department of Agronomy, Circular 26, November, 1925. Theodore Stoa.

"Prune the Bearing Apple Tree," Agricultural Experiment Station, University of Wisconsin, Madison, Bulletin 378, October, 1925, R. H. Roberts.

"Commercial Dehydration of Fruits and Vegetables," United States Department of Agriculture, Department Bulletin No. 1335. P. F. Nichols, Ray Powers, C. R. Gross, W. A. Noel.

The Quarterly Bulletin, Agricultural Experiment Station, Michigan State College of Agriculture and Applied Science, East Lansing, Michigan, Vol. 8, November, 1925.

Economics

To know the exact facts goes a long way to solving any problem. Modern methods of statistical analysis are helping to establish problems on a "fact" basis. Recently F. V. Waugh studied series of statistical tables relating to tobacco production in the Connecticut Valley.

As a result, he has put the serious situation that faces the tobacco industry of the Connecticut Valley on a sound basis of fact. It is shown just to what extent the demand for cigar leaf tobacco has decreased, how long the present stocks will last, and the causes for this depression in the industry. This study is discussed fully in Bulletin 134, Connecticut Experiment Station, Storrs, Conn., "An Economic Study of the Agriculture of the Connecticut Valley." The work was done under the Purnell Act as part of a comprehensive study of the agriculture of the Connecticut Valley.

"Possibilities and Limitations of Cooperative Marketing," University of California, College of Agriculture, Agricultural Experiment Station, Berkeley, California, Circular 298, October, 1925. H. E. Erdman.

"Farm Profits," Oklahoma Agricultural & Mechanical College, Agricultural Experiment Station, Stillwater, Oklahoma, Station Circular 56. C. T. Dowell.

Diseases

Among the diseases of tobacco, probably blackfire, mosaic and wildfire are the most dreaded. They are of bacterial origin and are controlled by careful attention to soil and seed bed sanitation. In Virginia alone, during 1920, blackfire caused a loss of over 20,000,000 pounds of tobacco valued at over $5,000,000.

Control may be effected by (1) soil disinfection (2) seed bed sanitation (3) rotation (4) care in field cultivation (5) destruction of diseased material that may come in contact with the seed bed or plants. Interested farmers should read carefully Extension Circular 65, by C. W. Edgerton, Louisiana Agricultural & Mechanical College, Baton Rouge, Louisiana.

Insects

Vast areas of corn land in the corn belt are infested with the European corn borer. Damage from the insect varies from year to year apparently dependent upon favorable climatic conditions, sometimes entire loss of crop is caused. The Ohio State University, Columbus, Ohio, in their circular "Crop Talk" No. 29, gives practical measures for "The Control of the European Corn Borer," by T. H. Parks and W. E. Hanger.

"The Present Status of the European Corn Borer in Michigan," Agricultural Experiment Station, East Lansing, Michigan, Circular Bulletin No. 70, by R. H. Pettit, throws further light upon this dangerous pest.

Other bulletins:

"Potato Spraying and Dusting Experiments in Michigan," Agricultural Experiment Station, Michigan State College, East Lansing, Michigan. Technical Bulletin No. 72, October, 1925. J. E. Kotila and G. H. Coons.

"Some Important Grape Insects," Agricultural Experiment Station, Michigan State College, East Lansing, Michigan, Special Bulletin No 148, October, 1925. L. G. Gentner.

"Service and Regulatory Announcements," United States Department of Agriculture, Washington, D. C. S.R.A. Insecticide 53, December, 1925.

Beautifying the Farm Home

(*From page 27*)

as well as the front. The usual procedure was for Brunskill to assist the family in its planning until a general outline would be developed. This outline would be sent to the specialist at the university who would complete the details and have a blue print made.

A TYPICAL case in the development of this project is that of the C. C. Fenstermaker home, Homerville, Ohio. The house, which naturally forms the center of the landscape development, was built 15 years ago. It is modern and quite a comfortable home. Some planting had been done but without any idea of complete landscaping. A small part of this material was left in place but most of it was taken up and reset as a part of the new plan.

Along in the winter, Brunskill sent a picture of the house and grounds together with some sketches to the university. At that institution they were called to the attention of H. L. Hedrick, specialist in landscape work. From the picture and sketches Professor Hedrick worked out the plan and had a blue print made which was sent back to Brunskill.

With the blue print in hand, Brunskill and the Fenstermaker family set about in a businesslike way to do the planting. They located each plant as indicated on the blue print. They spaded for each to a depth of 16 inches and worked well rotted manure into the soil as they tamped it around the roots of the plants and shrubs.

On the 28th of April the family made a day of it and set out the entire number of 98 shrubs and plants as outlined on the blue print. In completing the work of setting out the shrubs, a mulch was placed around each plant. Mr. Fenstermaker insisted on using a three inch layer of saw-dust for this purpose and it seems to have done its duty very well in keeping the weeds down and in retaining moisture. Other farmers in the county used straw for a mulch and they, also have secured satisfactory results.

The front porch was ornamented by a planting of "Thunberg's Spirea" at the left of the entrance and with "Anthony Waterer Spirea" at its right. At the end of the porch a clump of five "Coralberry" was set out on the left and five "Snowberry" at the right. In an angle formed by the walk to the side porch, they placed 10 "Regal's Privet." On the opposite side where the kitchen porch joins the house they set out "Summersweet."

AT the very front of the yard and at the right they placed a cluster consisting of eight "Mock Orange." On the left at the border they put 10 "Goldenbell." Immediately to the rear of that and also on the border they put "Snowball Hydrangea," then "Morrows Bush Honeysuckle." Following that came a bed of roses secured from previous plantings. All this was accomplished at an expense of only $28.05 for shrubs.

At the rear of the house they arranged a service yard just as suggested in the blueprint. On the farther border and, also, at the right of the service yard is to be a grape arbor. The planting of this and the construction of the arbor is being left for another season. This will shield effectively

from view the barns and orchard. At the left of this screen they added a touch of ornamentation by setting two small clusters of "Fragrant Bush Honeysuckle."

IN using the grape arbor screen as part of the plan would seem to lie one of the important principles of landscaping a rural home. This is to enable the farmer to be away from his work just as completely and thoroughly as is his city friend when he goes from his place of business to his home. A screen, be it a grape arbor or other planting of a growthy nature, goes a long way toward accomplishing this purpose.

The plan as followed left a nice open space in front of the house. The clumps and clusters and groups of plants were always set in nice graceful curved lines. Care was taken to set the taller plants in the background and the shorter ones in the foreground.

In a similar manner to that followed in the case of the Fenstermaker home, the others who took up this project were helped. Each home represented its individual problem as well as opportunity. Sometimes more of an effort was required to screen the fence or buildings than was necessary with others. Always the planting already on the ground was taken into consideration and was used to the fullest extent possible. Likewise the personal preference of the members of the family. Thus if the lady happened to have a preference for roses, a rose arbor very likely would be planted for some appropriate location.

THE farmers who took up this project have, in reality, become community demonstrators. They are beseiged by others who would beautify their own grounds. Brunskill's advice and help is very much in demand for this work. Making a county project of rural home landscaping gives them an opportunity to secure really capable suggestions without any great expense being involved. The project is highly pleasing to the people of the county.

Planting which shields farmyard from view

Lambing Time

(*From page 12*)

bran and alfalfa leaves just to pass the time away, in a place especially prepared for him. This place is so constructed as to permit lambs to enter but excludes the mothers.

"After a lamb is a month old his appetite and capacity increases. Feeds such as corn, oats, bran and alfalfa become palatable and are demanded in the ration of a lamb, if given an opportunity to acquire and appetite for them. Furthermore corn, oats, hay and pasture push the lambs rapidly toward their goal, the market.

"Early lambs and strong lambs are always good 'doers.' Lambs don't get a chance to present their appearance on the farm after March 20th because the ram is removed from the flock 5 months preceding this date. The ewes get a pound of grain per ewe, per day in winter, when most folk feed only a half pound or none at all. The thin prospective mothers are removed from the rest of the flock and given a little extra feed, and care and access to a good rye pasture in winter when weather permits.

"My system is to buy good western ewes, preferably from Montana, Idaho or Oregon. Ewes 2 to 4 years are best, but older ewes will raise a crop of good lambs and are often fat enough to go to market with the lambs. In fact, during the extremely high prices for sheep, I used old ewes entirely and when the depreciation in the sheep business came in 1920 my losses were small. By good care and feeding the death rate of these old ewes has not exceeded 7 per cent, which is only a normal loss of breeding sheep during a year.

"The main reason for using western ewes is the fact they are reasonably free from internal parasites. In mating the flock each year, we flush the ewes by placing them on good luxuriant pastures and supplementing with a little grain consisting of corn and oats. By so doing the ewes gain in flesh, come in heat regularly and are more apt to settle in lamb at the first serving.

"During the lambing season either my wife or myself stays close to the flock and separates the ewes as soon as the lambs are dropped from the main flock by using four foot hurdles. By keeping the ewe and her new born lamb or lambs closely confined together for a few days they get acquainted with each other.

"If the ewes are to go to market, we continue to feed them grain even after they go on pasture. A field of early sown winter rye is an ideal place for the ewes and lambs before the blue grass gets a good start. The lambs go to market in May or June, thrifty, prime, and of good market weight.

"If you insist on knowing when sheep give us the most trouble, I would have to say, during the lambing season. It takes regular and good care to save the lamb crop. We have a room in the corner of the barn that will hold 12 ewes and their lambs.

Last winter when it was 6 degrees below zero outside this room, the temperature was 27 degrees above zero inside without artificial heat. The sides and top are made of two thicknesses of matched lumber with building paper between.

"I arranged with my insurance company to hang a lantern in this room in cold weather but have never needed it since the room was constructed four years ago. Lambs have never chilled in this room regardless of weather condition."

Feed Hungry Trees

(*From page 25*)

very noticeable after the leaves had fallen as compared with the untreated trees. The unfertilized trees showed no change from their previous condition.

IN the winter of 1924-5 these trees, including all my King apples, received an application of a fertilizer containing 21 per cent available Phosphoric Acid and 21 per cent Potash, the Potash from German Sulphate of Potash (0-21-21) at the rate of 10 pounds per tree. Nitrogen was supplied in the form of chicken manure, which went on at the rate of 30 pounds per tree. The trees bloomed profusely, but owing to heavy April and May rains during blossoming time, set a very light crop. Nevertheless, they made a much better showing than other King orchards in the vicinity that had received chicken manure only.

GRAVENSTEIN apple trees, 33 years old, received in the Fall of 1924, an application of the 0-21-21 at the rate of 10 pounds per tree, and, in addition to this, 30 pounds of chicken manure. On 60 of these trees, the application of the 0-21-21 was doubled, but no increase was made in the chicken manure. The result was, in spite of the damage to the blossoms from the heavy spring rains, these 60 trees set a 100 per cent crop, being about 10 times as much fruit as set on the trees that received only 10 pounds each. That this increased application proved very profitable, goes without saying.

The quality of all the apples from the trees receiving the 0-21-21 was unexcelled, the fruit being unusually crisp, of finer color, and noticeably sweeter to the taste than that from trees that had received chicken manure only. This comparison also proved good when made with apples from other orchards that had received chicken manure only.

IN keeping tests made with Gravenstein apples, those receiving the 0-21-21 held up remarkably, developing no Baldwin spot which showed up badly in those receiving chicken manure only. Also they were much firmer in texture, remaining firm and solid long after the others had become soft and punky.

At date of writing—October 23rd, 1925—all my trees receiving this phosphate and potash treatment are in a splendid condition, with every indication that they will produce a bumper crop next year.

Outside of fertilizing, all the trees in this orchard received the same treatment in regard to spraying the cultural methods."

(NOTE: *Next year, Mr. Reed hopes to give us an account of the results from the use of high grade Phosphate and Potash fertilizers on his Hoover and Rome Beauty apples. This treatment was begun in the Fall of* 1924. *The improvement in these trees is already quite marked. It is evident, from the analysis of the fertilizers Mr. Reed is using, that he believes in high quality fertilizers as well as high quality apples.*)

We Know Cooperation Pays

(*From page* 17)

later realize the benefit derived from cooperation and join the association.

The greatest advantage of cooperation in our case is that with a minimum cost to each member we have been able to procure the equipment with which the grading and packing of apples are done efficiently and with dispatch.

OUR grader was paid for the first year by assessing each member so much on every barrel of apples they hauled to the packing house. The cost of this machinery and the additional cost of erecting or renting a building could not have been met by any of our members single-handed.

We have rented a large building from the Tobacco Growers' Association in which we have placed our grader. A track from the main line of the Hocking Valley R. R. has been run to the packing house. The cars in which the apples are shipped are run under a shed connected with the building. The grading, packing, and loading for shipping are all done under the same roof.

PACKING house expenses, and all other expenses for that matter, are paid by assessing every member of the association according to the value of the apples they bring to the packing house. That is, the more money a member gets for his apples, the more he is required to pay toward defraying expenses. The plan is similar to our present income tax law, only there is no way for the members of our association to dodge the payment of his tax. This plan is fair to all, as each member pays according as he is able to pay.

BY using the grader and employing expert packers, we get from 25 to 50 per cent more for our apples than we used to get when the work was done in the orchard.

We separate our apples into two general grades, A and B. The A grade specifies as to color. That is, this grade must have the color specified for the variety. The B grade must be perfect in every other respect excepting the color. The sizes of the A grade run from 2¼ to 3½ inches, and the B grade from 2½ inches upward. Both the A and B grades are shipped, while all of our defective apples are sold in the home market.

WE employ on an average of 30 people at our packing house during the apple season. A great many of these employees are women and girls. We have found that women can do the grading as well, if not better than the men.

The apples are placed on the rolls of the grader just as they come from the orchard. They are carried along on the rolls and are graded while in motion. For instance, two girls stand at the mouth of the grader and pick out all of the defective apples, placing them in a shoot which carries them to a man who puts them in boxes and barrels. Farther along the line are the A and B graders who place these grades on small rolls which carries them to other machines where they are classified as

to size. Of course, defective apples sometimes get on the wrong rolls and are carried into the A and B grades, but they are finally picked out by the man who runs the machine that grades the apples according to size. Our grader is run by electric power.

We handle from 6,000 to 15,000 barrels of apples a year, depending, of course, on the size of the crop. This year about 10,000 barrels of apples were handled at our packing house. We loaded from 2 to 3 cars daily.

We sold our last year's crop to the Federated Fruit and Vegetable Growers. This year's crop was consigned to a broker.

Gallia is one of the banner apple counties, both as to quantity of production and the quality of the fruit. Our best sellers are the Grimes Golden, Jonathan, Stark, Delicious, Styman Winesap, Gallia Beauty, and Rome Beauty.

The apple growers of Gallia county are getting their eyes open. This is shown by the fact that practically all of them are getting out of the old rut and are adopting new and improved methods. Great things are in store for the apple growers of this section.

* * *

Renovating the Farm Orchard

(*From page 24*)

can be covered. The under surfaces of the leaves must be covered with a film of spray as well as the top surface.

The entire orchard should be given the dormant spray from two directions with a shift of wind. If the wind was in the south when the trees were sprayed first, they should be sprayed again with the wind in approximately the opposite direction. This is extremely important if the trees show a considerable infestation of scale.

Many farmers would much prefer to hire someone to spray their orchards for them but this practice has not been very satisfactory even in the rare cases when such a man is actually available. In recent years some communities have organized spray rings. Such a ring usually has a membership of about 10 farmers.

At a cost of not over $30.00 a piece a small power sprayer is purchased. Someone in the community is hired to operate the sprayer and see to it that the orchards of the members are sprayed thoroughly and at the proper time. Clinton county, Indiana had 16 such rings in operation last season. The total cost of operating these rings including all labor and spray material averaged 88 cents per tree for a dormant and four summer sprays.

One man with the power sprayer does the work of two men with a barrel pump and the sprays can be much more thoroughly applied with this type of equipment. Over two carloads of spray material were used by 11 of these rings in 1924 and naturally the cost of spray materials is greatly reduced even where only one ring is operated. In most of the rings enough fruit is being sold to pay operating expenses as well as pay for the original interest in the ring outfit in addition to providing plenty of clean, wormless fruit for home use.

Spraying is the one thing which simply must be taken care of if the farm apple trees are to produce anything better than wormy crops of knarly cider apples.

Why Farm Electrification Drags

(*From page 20*)

A national committee representing the American Farm Bureau Federation, the National Grange, the National Association of Farm Equipment Manufacturers, the American Society of Agricultural Engineers, the General Federation of Women's Clubs, the American Home Economics Association, and the Federal Departments of Agriculture, Commerce and the Interior, has been organized.

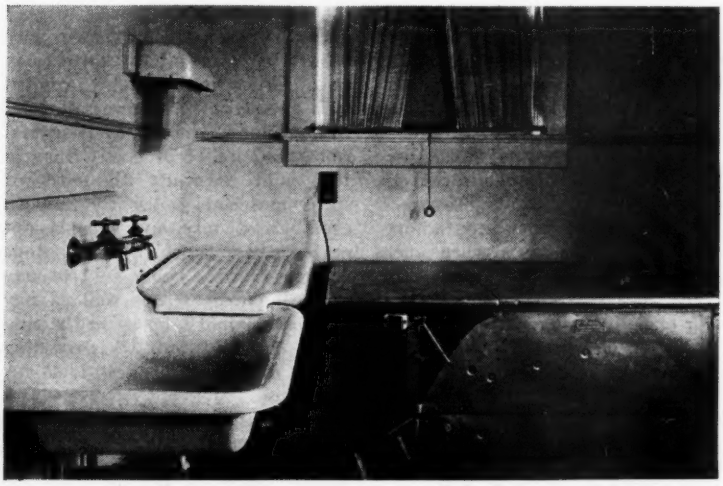
Broad investigations are under way by the National Electric Light Association. Special electrical surveys are in progress by State agencies in Minnesota, Wisconsin, Illinois, Indiana, Kansas, Alabama, Ohio, New Hampshire, and other states. All this research is focussed on the problem of introducing electricity as a major source of power in agriculture.

The total primary power used in American agriculture, according to an estimate by the Department of Agriculture, is about 50,000,000 horsepower. This is divided as follows:

	H. P.	Per cent
Work animals	21,660,000	or 44.1
Gas tractors	8,000,000	" 16.3
Steam tractors	2,500,000	" 5.1
Trucks	7,120,000	" 14.5
Stationary engines	7,320,000	" 14.8
Windmills	500,000	" 1.0
Electricity	2,080,000	" 4.2

Of the electric power 1,180,000 horsepower is furnished by central stations and 900,000 by individual plants, of which there are estimated to be around 350,000 on farms. This is a mere nothing, compared with the possibilities open for the use of electricity in agriculture.

Not all the farms at present without electricity could use it profitably. Certainly, however, a large proportion of them could. It would be costly to get it to them.



An electric dish washer in a New Jersey farm home

To supply 1,500,000 additional farms with electric current would necessitate the construction of at least 500,000 miles of transmission lines. At a cost of $1,000 a mile this would mean an investment of half a billion dollars for transmission equipment alone. Additional power house and other equipment would also be required.

Yet the necessary initial expenditure, large though it might be, would not prevent the work from being done, if its profitableness to the power companies were assured. As already said, the difficulty from their standpoint is the heavy expense in proportion to revenue that must be incurred for distribution, because of the long distance of transmission in proportion to the number of customers.

(Next month Mr. Chew will discuss the solution of this farm problem.

* * *

Southern Ways *with* Irish Potatoes

(*From page* 10)

WHILE many different fertilizer analyses are used, a 7-5-5,* 7-6-5, or an 8-5-5 are the three most commonly used. In the South Carolina belt the 7-5-5 is used almost entirely. In Virginia the 7-6-5 is preferred. Other sections like the 8-5-5 and some use an 8-4-4, but this is generally considered by the better growers as being too low in potash and ammonia.

Growers find it advisable to have the ammonia in the fertilizer coming from both organic and inorganic sources. Sulphate of ammonia is considered one of the best of the inorganic sources. Nitrate of soda is also considered a leader in this class, a part of the ammonia should come from these quickly available sources in order that the young plants may have some of the plant food for their immediate use. Some of the ammonia should come from dried blood, meat scrap or other organic sources which are more slowly available and which serve to distribute the available ammonia throughout the growing period of the plants.

LARGE yields of Irish potatoes cannot be secured on soil devoid of organic matter. Growers, therefore, find it desirable to follow the early crop of Irish potatoes with cowpeas, velvet beans, soybeans, corn, or some other crop which will add to the organic content of the soil. One of the most common methods is to plant cowpeas or soybeans, either broadcast or in rows to turn under. In the lower part of the South beggarweed is sometimes used. Crops of clover

*(The percentages are stated in the following order: phosphoric acid, nitrogen, potash.)

turned under make a very noticeable addition to the yield.

VERY often, however, potatoes can be grown year after year on the same soil and the organic content kept up by planting cowpeas or soybeans after the early potatoes are harvested and then turning under. This is not the most desirable method, as of course, rotation should be practiced, but in case it is desirable to grow potatoes on the same land two or three years in succession, then the organic content may be kept up by growing crops and turning them under as outlined above.

Often a crop of corn is planted and soybeans, velvet beans or cowpeas planted with the corn. This will give a good crop of corn as the large amount of fertilizer given to the potatoes will result in a good corn crop. This system also gives a large amount of organic matter to turn under.

The three leading varieties of this early Irish potato crop as grown in the South are Irish Cobbler, Triumph, and Spaulding's Rose.

The seed is ordinarily planted from 10 to 14 inches apart in the drill. In rows 3 feet wide and the hills 12 inches apart, 15 bushels are required to plant an acre, when the pieces are about one ounce in size. Approximately 19 bushels are required when 1¼ ounce pieces are used in such rows, and about 23 bushels when a piece 1½ ounce is used. Many growers have not used as much seed as they should. It is generally believed by many of the progressive growers that from 18 to 23 bushels per acre should be planted.

The growers are thoroughly aware of the fact that there is a direct relation, up to a certain point, between the size of the piece of potato planted and the yield. Many experiments and tests show that 1½ ounces is about the most economical size piece to plant. The piece of potato is usually covered from 3 to 4 inches deep as the early crop should not be covered as deep as the later crop.

Before the potatoes are planted, the seed is usually disinfected with corrosive sublimate or formalin in order to control the various diseases, such as scab which attack the surface of the potato. Most growers use the corrosive sublimate as this material is effective in controlling black scurf infection as well as scab.

SPRAYING and dusting are resorted to, to control blight and bugs. The early blight, causes more trouble than the late blight but neither of these are as serious pests in the South as in the North. Bordeaux mixture is the standard liquid spray for the diseases to which the arsenate of lead is added, in order to control eating insects.

Harvesting of the crop commences in Florida the latter part of February. In the Hastings section it is usually early April; in the Carolinas in May, and early June; and in Virginia in June.

While the growers of the Irish potato often fail to make a profit, and sometimes have a considerable loss, yet those who stay in the business year in and year out usually find it quite a profitable crop to grow. None of the growers, however, would think of trying to grow it without making the condition for rapid growth as nearly ideal as possible. Hence the absolute necessity of thorough preparation of the soil, the planting of good seed and the use of large amounts of high-grade commercial fertilizer.

Reclaiming the East

(*From page 22*)

"Heretofore conservation was applied to untouched natural resources, while complete exhaustion of large areas of farm lands was being accomplished without effective protest. Great forests have been razed in Mississippi, Wisconsin, Michigan, and Minnesota during the last half century. The land lies idle. The soil in some localities requires only stumping to prepare it for the plow, and within shipping distances of New Orleans, Birmingham, Atlanta, Memphis, Detroit, Cleveland, Milwaukee, Minneapolis, St. Paul, Chicago, and other large metropolises.

"Reclamation of these humid regions does not require the expenditure of millions of dollars for irrigation works. Their water supply comes from the clouds and is spread without cost. The Federal Government has spent $200,000,000 to build irrigation works to provide water for 1,805,000 acres of arid and semi-arid lands in the West. Sixty million dollars will be required to complete these works, and a like sum is to be spent in proposed new projects. Expenditure of lesser sums for fertilizers in the restoration of exhausted lands would make quick returns and eliminate the long haul.

"Reclamation is a national problem in conservation and should be so treated. It should be applied to the older sections of the United States as well as to the newer ones. A broader conception of reclamation must embody the reclaiming of every character of land capable of producing crops. We should farm less and farm better. No conservation policy, in its broad sense, that does not deal primarily with production of human food near to the place of consumption is sound."

Dr. Work is not deluded into the belief that the Government's new program will be easy of accomplishment. It is appreciated that the same problems facing Federal reclamation of attracting settlers, and assisting them in erecting homes applies to the East in providing fertilizer, buying farm implements, and establishing attractive agricultural communities. The problem is both an economic and a social one, the solution turning on the establishment of a profitable agriculture, and supplying to agricultural communities the social attractions which towns and cities provide.

Already North and South Carolina have joined with the Federal Government in making surveys of neglected agricultural areas within their borders with the ultimate object of restoring the soil and settling the land. Other states, having wide stretches of unoccupied and un-peopled arable lands, are being invited to join in this work of regenerating idle acres.

* * * * *

An inscription frequently seen on old English drinking vessels.

The Old Farmer's Toast

Let the wealthy and great
Roll in splendor and state
I envy them not, I declare it;
I eat my own lamb,
My chickens and ham,
I shear my own fleece,
And I wear it.
I have lawns, I have towers,
I have fruits, I have flowers;
The lark is my morning alarmer:
So my jolly boys, now
Here's God-speed to the plow,
Long life and success to the farmer.

Agricultural Developments

(*From page* 38)

Mr. Cottey produced an average yield three times that for the county. Some of the reasons given for his success are: liberal fertilization, deep plowing, extraordinary good seed bed, careful planting of strong plants followed by resetting to insure perfect stand, and liberal cultivation.

Fifteen growers joined the club last spring and four of them came through with 10 tons or more per acre. The club members used an average of 500 pounds of fertilizer to the acre and the average yield was 6.59 tons. The nonmembers used 400 pounds of fertilizer to the acre and their average production was 4.8 tons per acre. Growers who used no fertilizer at all got an average yield of 3.65 tons of tomatoes.

Corn Testing

One of the best demonstrations of the value of seed corn testing will be spread before the corn growers of the Middle West early next summer. Then those who did not make individual ear tests of their seed will have an opportunity to test their patience while replanting, if they have seed to do it with.

The Department of Agriculture and many states have already emphasized the importance of careful seed testing because of the poor quality of seed corn as the result of early freezes. Tests already made at Iowa State College show emphatically the need for careful scrutiny of every ear of seed corn in regions where fall weather was not suitable for ripening of good viable seed. Tests were made on 45,903 ears collected from 17 counties and germination was found to be strong in only 53 per cent of them.

Missouri Eggs Through Minnesota Exchange

An indication of the increasing perfection of cooperative marketing facilities is shown in the recent arrangement whereby a Missouri egg producers' organization is to have its products marketed through a Minnesota cooperative distributing concern. The Minnesota Cooperative Egg and Poultry Exchange of St. Paul, which is to handle the eggs for the Mark Twain Poultry Producers' association of Hannibal, Mo., is a selling agency with a traffic department, a supply department, and an accounting department. The Missouri association, which is just being developed, is to have one representative on the board of directors of the Minnesota organization which is made up of local associations.

Milking Three Times a Day

Recently the Department of Agriculture reported that investigations by the Bureau of Dairying had shown that milking cows three times instead of twice daily increased milk production as much as 18 per cent but the investigators were not ready to say that the increase throughout the year would be enough to make the practice profitable.

However, the New Jersey College of Agriculture says the practice is profitable for the average dairy farmer during the winter months—if he can find the time. The college offers as evidence two experiences. When the college herd failed to supply the demand for its special milk, milking three times a day was resorted to in the hope that the increase would make up the deficiency. It did.

Although the cows had been

milking from three to six months, the average daily production immediately went up 4 quarts per cow per day. If the cows had been fresh, says the dairy specialist, the increase would have been greater.

A breeder of purebred Holsteins in Cumberland county, New Jersey, who had the most productive herd in the local cow testing association last year as the result of milking three times a day, is the other example cited. The owner of this farm, D. Morton Davis, says that by milking a group of 10 cows three times a day instead of twice daily he is able to ship an extra 40-quart can of milk daily.

The New Jersey college says that for humane reasons heavy producing cows should be milked three times a day. It also contends that a 15 to 20 per cent increase can be expected from cows producing 40 pounds a day, and that heifers milked three times have their future productivity increased as well as yielding more immediately.

Possible Profit in Chestnut Stumps

Searches for new and better sources of tannin, large quantities of which are used in the tanning of leather, have resulted in some interesting facts regarding the distribution of this substance in chestnut trees. The Bureau of Chemistry has found that the stumps and roots of this tree are particularly rich in it, some samples of root bark containing as high as 30 per cent and root wood more than 20 per cent. Only from 7 to 9 per cent of tannin is found in the ordinary chestnut wood of commerce. The slabs are said to yield more of the extract than the rest of the tree.

Various other sources have been investigated, among them the bear clover, a plant which grows extensively over the Sierra Nevadas.

Peasants of Irak, Persia, going out to harvest crops

Canners Seek Benefit of Government Warehouse Law

CERTAIN canners of fruits and vegetables have requested the United States Department of Agriculture to extend the Federal warehouse act to public warehouses that store canned fruits and vegetables. Whether or not this can be done will depend largely on the interest shown and the demand made by the industry as a whole, the department says. Canners who have asked to have the warehouse act extended to canned fruits and vgetables believe such action would tend to stabilize prices by facilitating orderly marketing. They believe steadier markets would be created not only for the canned products but also for the farmers' raw materials.

"Markets for canned fruits and vegetables have been more or less demoralized at times," declared H. S. Yohe, in charge of administration of the warehouse act, "due to inadequate financing of the large surpluses and packs in recent years. The pack last year was one of the largest in the history of the canning industry.

"Representations have been made to the department, that if the warehouse act were extended to canned goods the organizations that are not sufficiently financed to enable them to carry goods pending orderly marketing could take their warehouse receipts to banks and be properly financed, thus avoiding the dumping of more stock on the market than can be readily absorbed.

"If this could be accomplished," he said, "it is felt that it would have a stabilizing effect on the market for the farmers' raw products. The aspect of stabilization of the market for canned goods as well as for the raw products appeals to the department as having merit. But whether or not canned goods shall be placed on the eligible list for storage under the warehouse act depends mainly upon the interest shown and demand made by the industry."

Mr. Yohe declared that Federal warehouse receipts for commodities which have been on the eligible list for some time have gained an enviable reputation among leading credit bankers. They have resulted, he said, in securing not only wider money markets but larger advances at better terms. They have been recognized by Federal Reserve banks as a type of warehouse collateral which makes paper supported by warehouse receipts desirable for rediscount purposes.

One of the Federal Reserve banks has ruled that it would accept no paper supported by warehouse receipts covering agricultural products if such products were storable under the warehouse act, unless the warehouse receipts were issued under that law. The Governor of another Federal Reserve bank has indicated that he regards the Federal warehouse receipt as the best agricultural warehouse paper the country has ever had. Bankers in leading financial centers have taken the same attitude.

"With such a viewpoint on the part of bankers," Mr. Yohe said, "the Federal warehouse act, if extended to canned goods, should offer a real service to the canning industry."

Split Pits in Peaches

By B. E. *Maynard*

San Jose, California

Editor's Note:—This result, obtained for one year, is published, not as final conclusions, but as a stimulus to further work along these lines.

Regarding the effect of fertilizers in overcoming the splitting of pits in the peach, the following data was taken from a series of five experimental plots carried out on tuscan cling peaches on Mr. M. J. Newkom's place about four miles south of Yuba City, California. The plots consisted of 10 trees each, which were treated as follows:

Plot No. 1, received 10 pounds per tree of a fertilizer containing 5 per cent Nitrogen, 10 per cent Phosphoric Acid and 15 per cent Potash (K_2O)—(5-10-15).

Plot No. 2, received 10 pounds per tree of a fertilizer containing 5 per cent Nitrogen, 10 per cent Phosphoric Acid, but with the Potash left out—(5-10-0).

Plot No. 3, received 10 pounds per tree of a fertilizer containing 5 per cent Nitrogen, No Phosphoric Acid, and 15 per cent Potash—(5-0-15).

Plot No. 4, received 10 pounds per tree of a fertilizer containing No Nitrogen, 10 per cent Phosphoric Acid, and 15 per cent Potash—(0-10-15).

Plot No. 5, received no fertilizer whatever. This was known as the *Check Plot.*

Split pit count was taken from each of the plots, and the number of peaches examined was recorded. These peaches were taken as picked from different parts of the plots:

Plot	No. 1	No. 2	No. 3	No. 4	No. 5
Fertilizer treatment (10 lbs. per tree)	5-10-15	5-10-0	5-0-15	0-10-15	0-0-0
Split Pits	17	40	192	167	163
Sound fruit	510	390	252	271	286
Number examined	527	430	444	438	449

The percentage of split pits and sound fruit from each plot is as follows:

Plot	No. 1	No. 2	No. 3	No. 4	No. 5
Fertilizer treatment (10 lbs. per tree)	5-10-15	5-10-0	5-0-15	0-10-15	0-0-0
Per cent splits	3.23	9.30	43.24	38.13	36.31
Per cent sound	96.77	90.70	56.76	61.87	63.69

As a further test, one tree was picked out in Plot No. 1 (5-10-15), which—according to the men picking and making comparisons with trees in a similar condition throughout the orchard—should have been full of split pits. Three boxes were taken as picked from this tree and a close examination of the peaches resulted in the following:

Number of split pits	14	Per cent splits	3.59
Number of sound peaches	376	Per cent sound	96.41
Total number	390		

The conclusions drawn from the results, as far as these experiments have gone, are that nitrogen and phosphoric acid are the controlling factors in overcoming this split pit trouble, since in Plot 3 (5-0-15) where the phosphoric acid was left out; and in Plot 4 (0-10-15) where the nitrogen was omitted, the number of split pits increased greatly. Potash, in combination with these two, also seems to have had some beneficial effect as Plot 2 (5-10-0) where potash was left out shows a 6 per cent increase in split pits over Plot 1 (5-10-15) where potash was used. Noting the difference in favor of Plot 1, a larger number of peaches were examined from this plot, which, including the peaches from the tree examined separately made a total of 917 out of which there were found only 31 splits.

The peaches examined were all from the first picking. This makes the second year that the fertilizers were used on these plots. No observations were made last year in regard to the effect on splits. It is intended to continue the fertilization of these plots so as to keep them under a longer period of observation.

* * *

County Agents Test Seed Corn

Many of the County Extension Agents of Nebraska have already started their plans for local seed corn testing stations in their offices. They propose to test all samples of seed corn brought into them by the farmers of their counties. They will do the work promptly and return the results to the farmers as soon as the tests are completed. The Agricultural College is helping them with suggestions about equipment and methods of testing.

The seed corn situation in the state is the most serious since 1917, state agronomists say. Only forty-five per cent of the seed corn which was in the field October 26 will germinate strong, according to the average of more than 300 tests made at the college from samples from every part of the state. Corn in all parts of the state was frozen during the zero weather of late October. Farmers are being urged to get their seed corn for this spring as near home as possible. Careful selection and then testing will help them pick out the ears that will grow.

Invoicing Days Arrive For South Dakota Farmer

Invoicing days for South Dakota farmers are here. R. H. Rogers, farm management demonstrator at South Dakota State College, says that the best time to take an inventory on the farm is during the first three months of the year when most of the cash crops have been sold and the farmer has time to make a check-up on his records before the next crop year begins.

During the past year, over 19,000 copies of the farm record book compiled by Rogers and distributed by the State College extension service for the cost of the printing, 15 cents, have been sent out. Most of these have gone to eighth grade pupils in the rural schools. However, county agents report 715 record books distributed to farmers and it is estimated that at least 300 farmers are keeping farm records.

* * *

Much of this talk about an impending cold wave is only hot air.

Mississippi Complete Results of Fertilizer Tests for Cotton

By E. B. Ferris

Asst. Director, South Miss. Branch Expt. Station, Poplarville, Mississippi

RESULTS of experiments conducted at the South Mississippi Branch Experiment Station for 1925 have been submitted for publication in the form of circulars and reports and these will soon be available for general distribution. In order to comply with the law which required competitive bids on all publications of this kind, the printing of these results will necessarily be delayed, so in order to get the salient facts about these results promptly to the people, we hope to issue a series of Press Circulars giving the outstanding facts about the year's work.

Some of the figures that we will give differ from those reported from time to time in previous articles written by us, for the reason that different values have been given cotton in the final report to those used in the preliminary ones, due to a serious decline in the cotton market, and also to the fact that a different method has been used in comparing yields due to fertilizers with the check or unfertilized plats. Heretofore we have compared the yields of check plats with the nearest unfertilized plats, but the U. S. Department of Agriculture in Bulletin No. 33 has worked out a method much better than the one heretofore in use in making these comparisons and this has recently been adopted by all the experiment stations in this state.

Soil fertility is the most important factor in successful agriculture, and in South Mississippi this soil fertility hinges largely around the proper use of fertilizers. Work with fertilizers has, therefore, been the outstanding feature of the year's results. It may be interesting to know just how the many tests with fertilizers under cotton resulted in terms of net increases per acre over and above the cost of those fertilizers.

* * *

FERTILIZERS are sold according to the amount of available phosphoric acid, nitrogen and potash which they contain and these are indicated in the analysis under which they are guaranteed. For instance, an 8-4-4 fertilizer is one that is guaranteed to contain 8 per cent phosphoric acid, 4 per cent nitrogen or ammonia and 4 per cent potash. A mixture of 300 lbs. acid phosphate, 150 lbs. nitrate of soda and 50 lbs. sulphate of potash will give approximately an 8-4-4 fertilizer. At least in our work here we have assumed that it would and have varied the mixtures in easy multiples of these amounts. By adding to or subtracting from the above constituents, we have made quite a number of combinations to be used under cotton, corn, sweet potatoes and tomatoes.

Of course these results are not

final and not always consistent, but they do give a good indication as to the proper fertilizer for use in these soils to grow a particular crop. Our people are perhaps most interested in cotton and below we give the net value per acre of cotton produced as a result of the use of these fertilizer mixtures, 600 lbs. per acre being approximately the quantity used: 8-4-0, $40.33; 8-4-2, $38.40; 8-4-4, $28.40; 8-4-6, $20.37; 8-4-8, $16.78.

These results indicate no need for potash, but were obtained on land which had grown no cotton for a number of years and on which there was no tendency for cotton to rust. On other land here where cotton had been grown for three years in succession, cotton without potash rusted badly and the addition of 50 lbs., of sulphate of potash to acid phosphate and nitrate of soda gave a very material increase in the yield of cotton, more than 200 lbs. of seed cotton per acre, an investment of $1.25 in potash giving an increase of $15.12 in cotton. This shows that every farmer must use judgment in the selection of his fertilizer for his particular soil and crop and that no one can do more than give him very general advice.

An 8-4-4 fertilizer as indicated above gave a net increase $28.40; 8-6-4, $30.60 and an 8-8-4, $40.33, showing the need of a fertilizer rich in nitrogen, much richer than the average farmer is now generally using, and considering that our results for years past have gone to show the same thing, we have no hesitancy in stating that these results are approximately correct and show the real need of our soils.

To show the relative importance of phosphoric acid in a fertilizer mixture, these results gave for an 8-4-4 mixture a net increase of $28.40; a 6-4-4, $22.93; and a 4-4-4, $18.86, showing the need of a fertilizer relatively rich in phosphorus. Really, phosphorus, according to past results at this station, is the most seriously deficient element in Coastal Plain soils.

An effort was made in 1925 to determine the most economical amount of fertilizer to be used per acre under cotton and resulted as follows: 600 lbs. of an 8-4-4, $28.40; 1,200 lbs., $39.10; 1,800 lbs., $32.08; 2,400 lbs., $14.34. Apparently the most economical amount lies somewhere between 1,200 lbs. and 1,800 lbs., possibly around 1,200 lbs.

We wish it to be distinctly understood that these results are merely indicative of the true needs of South Mississippi soils and that every farmer must be his own judge as to just how closely they are to be followed. Under different weather conditions they might vary greatly, but they are certainly in line with results obtained here during many previous years.

* * *

Farm Crop Costs Estimated Higher

(*From page* 36)

cut down the unit cost of production and make farming a profitable undertaking", says R. H. Rogers, farm management demonstrator at the college. "Although these figures are for Kingsbury county conditions, they will apply, in a general way, to the greater part of eastern South Dakota. In the extreme northern and western portion of the state or elsewhere where more extensive methods of farming are carried on, the labor and overhead charges would be lower. Smaller yields in these sections however, would tend to increase the unit costs to approximate those given above.

Nebraska Hay School

The first hay grading school in Nebraska was held in January at the Agricultural College in Lincoln. It lasted two weeks, giving information and actual training and practice in grading hay according to the new standard hay grades that were recently adopted by the U. S. Department of Agriculture.

While the primary purpose of the short course was not to make hay inspectors, those who qualified at the end of the course are eligible to become lisensed inspectors. The chief purpose of the school was to give growers, dealers, and others interested in hay an opportunity to gain practical knowledge of the quality and the marketing of hay. No fee was charged.

More than 100 bales of prairie and alfalfa hay were collected from different parts of Nebraska and adjoining states to illustrate the various types and grades of hay. The United States Department of Agriculture cooperated with the Nebraska Agricultural College and furnished men to instruct the classes. Edward C. Parker, the man who is quite largely responsible for the present hay standards, had charge of the school a part of the time.

* * *

Edward Ruml Wins Watch at Crop Show

Edward Ruml, a corn club boy from Charles Mix county, South Dakota, who has been doing club work for four years, won the gold watch offered by the Aberdeen Chamber of Commerce for the champion corn club exhibit at the South Dakota Crop Improvement show recently in Aberdeen. Edward is a brother of Charles Ruml who not only won the corn club sweepstakes prize last year but also won sweepstakes for the entire show. The corn exhibited by Edward Ruml this year will be used in the exhibit car that is being sent through Minnesota, Iowa and Illinois.

Nearly 100 farmers within an 8 mile radius of Holmen, Wisconsin, put up a summer's supply of ice from a cooperative owned ice field during the second week in January

Thoroughness

(*From page* 8)

tographer's name to merely his initials.

Thus, under Monsieur Bok's smiling phiz appears "© U. & U." —which means "Copyright Underwood and Underwood."

How simple! How American! How it saves time, effort and space! How *un*-thorough it is.

The aim of writing and printing is to convey from one mind to another a thought, an emotion, or a fact. That is, as Webster says, "the quality of achieving completeness." It is the end. The method is unimportant. Methods are not much—results count.

And, I contend, in my simple and amateurish way, that abbreviation is merely a form of thoroughness, which is, after all, a relative matter.

HENRY FORD, the world's richest man, was touring through one of his new plants one day last September.

He came upon a room crowded with clerks. "And what are these chaps doing?" he asked of the manager.

"We are accumulating here some valuable and *thorough* records for you. When finally completed they will show *thoroughly* and with intimate detail a flow-chart of each department with graphs depicting the daily output."

"Fire 'em all!" exclaimed Henry, "and burn up what they've done. I don't want to see it. And I don't want anybody else to waste their time milling over the stuff. It is water gone over the dam. Take off their white collars and put 'em to work building cars. We're behind in filling orders. If any of 'em won't go to work—*fire* 'em. And that's that!"

He strode out.

Thoroughness? Yes. But only where it counts—*in the car.* Purely American act—this little strategy of Ford's. Some folks are so cluttered up with *thorough* records they cannot cut clean and sharp through to the essentials. Not Ford. He may not be thorough —and how he would offend Bok!

To achieve the end. *Desideration!*

AMERICA does it. Americans do it. And in doing it they commit daily acts of thoroughness which, translated into Bokese, means they are careless.

A gentleman by the name of Gregg; another by the name of Pittman; and several more whose cognomens escape me at the moment, devised certain well-known systems.

A devotee of one of these systems sat for years at the side of Edward "Waggish" Bok, tremblingly converting into heathenish pot-hooks the words of wisdom that fell from his lips, and for which American Womanhood—or that portion of it which ponied up Two - Dollars - the - year for the Homely Ladies Choinal—anxiously awaited.

Accursed feminine specimen of un-thoroughness! Knew ye not that the Big Chief abhorred the thought of abbreviation? Why had you the colossal temerity to convert into a mere twitchy curve a beautiful American word like "success"? Why not spell it out! S-u-c-c-e-s-s.

Alas! Out with your stupidness. "Whatever is worth doing at all is worth doing well," and

shorthand, while convenient and time-saving, is but another dreadful American habit which typifies that failing of ours to achieve results with the least effort and in the shortest time—that dire tendency to gloss over, to ignore the charm of completeness, to carelessly abbreviate!

* * *

AMERICANS are the most thorough people on the earth. They go *through*. They get *results*. They slash right and left through encumbering debris—and get to the goal.

Results count.

When a Dutch boy sees some apples in a tree and wants tnem, does he make a ladder of teakwood, put together with hand trimmed dowels of ash, neatly Valspar the affair and then lean it carefully and thoroughly against the trunk of the apple-tree?

I believe he does. That is Dutch thoroughness. And that is why the Dutch boy often gets no apples!

For about the time he gets around to the final job of climbing *thoroughly* up in the tree on his *thorough* ladder, he finds to his dismay and chagrin that some unprincipled, untutored, rough-neck American kid, unversed in Dutch thoroughness, has seized the nearest club and knocked all the apples down! He has filled his pockets and is going down the road yelling that "methods aren't much—results count!"

The American has learned when to short-cut to results, and when to be thorough. He is as thorough as any other nationality when he sees that thoroughness will bring more results than quick action. But he saves time, cuts corners and cans the frills when they are not necessary.

"American lack of thoroughness." Doesn't it beat the Dutch!

Distinguished "Milkmaids"

(*From page* 31)

THE "Milkmaids" ready for the start in the amateur milking contest held in the judging pavilion at Purdue University before a capacity audience during the Agricultural Conference.

They are from left to right:

Walfred Lindstrom, Pleasant Lake, Indiana, Chairman of the Agricultural Committee of the Indiana Bankers' Association; Dean J. H. Skinner of Purdue University; President E. C. Elliott of Purdue University; R. C. Jenkins of Orleans, Indiana, President of the Indiana State Board of Agriculture; F. E. Schortemeier, Secretary of State, Indianapolis.

Mr. Lindstrom was declared the winner, although many of the audience thought Dean J. H. Skinner should have had this great honor. F. E. Schortemeier gave an excellent exhibition of a city man trying to milk a cow. In the four minutes allotted he was able to produce only a few ounces of milk.

* * *

KICKER OR PULLER

No horse can kick and pull at the same time. When he commences to kick he stops pulling. When he commences pulling you may be sure he has stopped kicking.

* * *

A HINT

Wife (reproachfully): "John, you're kinder to dumb animals than you are to me."

Hubby (getting ready to dodge): "Well, you try being dumb and see how kind I'll be."—Farm Life.

Valentines

ONE of the brand new ideas this department is introducing this year is the custom of sending around mushy little cards bearing sweet love-verses on St. Valentine's Day. We know this idea will be accepted with universal acclaim by our readers, and we are bold to submit a few sample verses which will be found quite appropriate:

* * *

I. (In the poignant mood):
Sure as the flivver
Is hard to start,
Our parting will probably
Break my heart.

II. (In the confidential mood):
Menus are read,
Taxis are blue,
Shows are expensive
And so are you.

III. (In the complimentary mood):
Your eyes are so lovely,
And so is your nose,
But I pity the man
Who pays for your clothes.

* * *

Of course there will be some who do not care for these sickly sentimental verses. Advertisers, for instance, will want to send a few Valentines to their customers, utilizing some well known sales method. For such we submit the following:

I. (By the direct, or high-pressure method):
White or colored,
Plain or clocks,
Always purchase
Bunkum's socks.

II. (By the subtle, or insinuating method):
Sure as it's hard to
Accumulate wealth,
You should take Bill's Pills
For your health.

III. (By the method of flattery),
Your neck's like the swan,
Your eyes are like stars,
Say, why don't you buy
One of Skinnem's Used Cars?

* * *

Farmers will find the Valentine suggestion quite useful and convenient. Verses like these might be used:

* * *

I. (For a neighbor):
With deep respect
Let me repeat:
Please keep your cows
Out of my wheat.

II. (For the hired man):
I send you out
To hoe the rows,
Not to stand still
And scare the crows.

III. (For a son at college):
There's just one thing
That strikes me funny:
You never write
When you don't need money.

* * * * * * *

The seed catalogs are here, and Ike Dusenberry is trying to rent two hundred more acres of ground so he can have plenty of room to raise twenty hills of Giant Mammoth Tomatoes he ordered from one of them.

WINNERS

Oliver Plows Wins Two Firsts

at the

Forty-Seventh Annual Wheatland Plowing Match

From all outward appearance most plows look very much the same, but that there is a difference in the quality of their work is evidenced by the judges' decision in the 47th Annual Wheatland Plowing Match. First honor in two classes was awarded to operators of Oliver plows.

Competition between drivers was very keen in the various classes. However, Mr. G. H. Wright who operated an Oliver plow, was outstanding in the manufacturers' class and won first honor with the decisive lead of 5 points over the outfit which won second, and 12 points over the winner of third place.

First place in the boys' class was awarded to Forrest George, Jr., who also operated an Oliver plow.

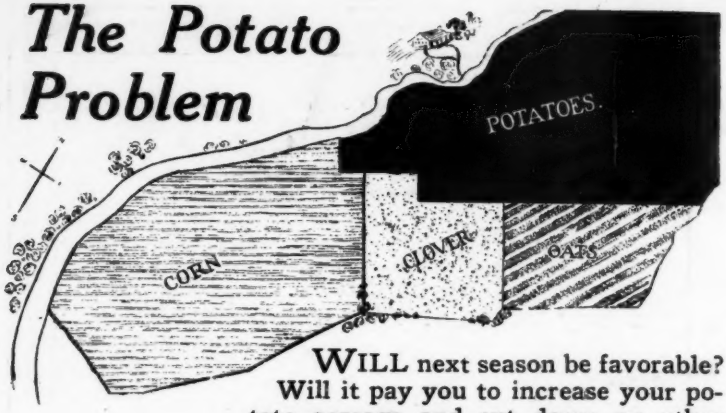
Farmers appreciate the advantage of owning a plow capable of doing championship work not only in the hands of master plowmen but also in the hands of the average farm operator—in day by day work.

OLIVER

OLIVER CHILLED PLOW WORKS

South Bend, Indiana

The Potato Problem



WILL next season be favorable? Will it pay you to increase your potato acreage and cut down on other crops?

In other years after a good marketing season, the tendency has been toward increased acreage—often followed by overproduction and low prices.

The best solution is: increase your yield per acre—reduce your production cost per bushel.

Through careful cultural methods—proper selection of seed, spraying, and other details—and through careful soil management such as crop rotation and the use of high analysis fertilizers, you can increase your yield per acre and reduce your production cost per bushel.

The results of many experiments show that 80 to 100 pounds of actual potash per acre, applied with the proper quantities of nitrogen and phosphoric acid, give profitable returns.

On this basis at least 1,000 pounds per acre of a high analysis complete fertilizer containing 8 to 10% potash, or 2,000 pounds per acre if the potash content is 5%, are required to supply the necessary potash. Many successful growers prefer sulfate of potash in their mixtures.

FREE

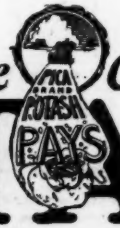
Potato growers interested in higher yields per acre—at lower production-cost per bushel—will find helpful information in the newly revised booklet "Better Potatoes." You can obtain free copy by writing to the address below.

POTASH IMPORTING CORPORATION OF AMERICA

10 Bridge Street, New York

ATLANTA, GA. SAN JOSE, CAL. BALTIMORE, MD.

Sales Agents—H. J. Baker & Bro., 81 Fulton St., New York
West of Rockies—Meyer, Wilson & Company, San Francisco, Cal.

Genuine German

POTASH